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ABSTRACT

This edition, the 24th report in a series begun in 1964, provides revisions of projections shown in the previous year's report. It includes statistics on elementary and secondary schools and institutions of higher education at the national level, projecting figures for enrollment, graduates, classroom teachers, and expenditures to the year 2005. Projections reflect the 1990 census, with the incorporation of 1992 estimates and latest assumptions about fertility rate, net immigration, and mortality rate. A methodology section describes models and assumptions used to develop the national projections. They are based on an age-specific enrollment rate model, exponential smoothing models, and econometric models. Most projections show three alternatives, with the first set (middle alternative) expected to be the most likely projection and the low and high alternatives providing a reasonable range of outcomes. A chart provides a brief forecast summary. National enrollment in elementary, secondary, and higher education is predicted to increase over the period, as are numbers of graduates, earned degrees conferred, numbers of classroom teachers, and expenditures. State figures are expected to vary in the forecast period. Data is presented in 70 figures and 52 tables, with an additional 37 tables in four technical appendixes discussing methodology. The report includes a glossary of data and statistical terms. (SLD)

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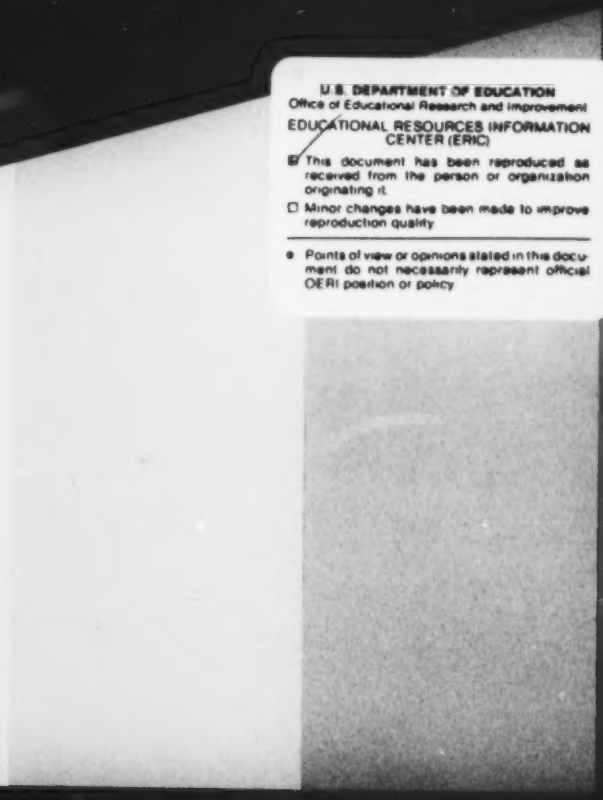

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PROJECTIONS OF EDUCATION STATISTICS TO 2005

Debra E. Gerald
William J. Hussar

National Center for Education Statistics

U.S. Department of Education
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Foreword

This edition of *Projections of Education Statistics to 2005* is the 24th report in a series begun in 1964. This report provides revisions of projections shown in *Projections of Education Statistics to 2004* and includes statistics on elementary and secondary schools and institutions of higher education at the national level. Included are projections for enrollment, graduates, classroom teachers, and expenditures to the year 2005.

In addition, this report includes projections of elementary and secondary enrollment and high school graduates to the year 2005 for public elementary and secondary schools at the state level. These projections were produced to provide researchers, policy analysts, and other users with state-level projections developed with a consistent methodology. They are not intended to supplant detailed projections prepared in individual states.

The projections presented in this report reflect the 1990 census. The revised population projections developed by the Bureau of the Census reflect the incorporation of the 1992 estimates and latest assumptions for the fertility rate, net immigration, and mortality rate.

The report also contains a methodology section describing models and assumptions used to develop the national projections. The projections are based on an age-specific enrollment rate model, exponential smoothing models, and econometric models. The enrollment model uses population estimates and projections from the Bureau of the Census. The exponential smoothing models are based on the mathematical projection of past data patterns into the future. The econometric models use projections of exogenous variables from DRI/McGraw-Hill, an economic forecasting service. Therefore, assumptions regarding the population and the economy are the key assumptions underlying the projections of education statistics.

Most of the projections include three alternatives, based on different assumptions about growth paths. Although the first alternative set of projections (middle alternative) in each table is deemed to represent the most likely projections, the low and high alternatives provide a reasonable range of outcomes.

In the forecast summary, key demographic and economic assumptions appear in chart 1 and selected education statistics are shown in figure 1. A summary of the projections is available in a pocket-sized folder, *Pocket Projections 2005*.

Susan W. Ahmed, Acting Associate Commissioner for
Statistical Standards and Methodology
December 1994

Acknowledgments

Projections of Education Statistics to 2005 was produced by the National Center for Education Statistics in the Statistical Standards and Methodology Division under the general direction of Susan W. Ahmed, Acting Associate Commissioner, and Theodore H. Drews, Chief, Projections and Special Programs Branch. The report was prepared by Debra E. Gerald, Mathematical Statistician, and William J. Hussar, Financial Economist.

Debra E. Gerald prepared national projections of the following: elementary and secondary enrollment (chapter 1); higher education enrollment (chapter 2); high school graduates (chapter 3); earned degrees conferred (chapter 4); and classroom teachers (chapter 5). She also prepared state-level projections of public elementary and secondary enrollment (chapter 8) and public high school graduates (chapter 9). In addition, she prepared the appendixes explaining the methodologies used to develop these projections and the data sources. William J. Hussar prepared the projections of expenditures of public elementary and secondary schools, including public school teacher salaries (chapter 6) and expenditures of institutions of higher education (chapter 7). Also, he prepared the appendixes explaining the methodologies used to obtain these projections, selected portions of the data sources, and glossary.

The technical review was done by Robert S. Burton of the National Center for Education Statistics. Valuable assistance was also provided by the following reviewers: Ebo Otuya of the American Council on Education; Jeff Gruenert of the Bureau of Labor Statistics; Vance Grant of the Office of the Deputy Assistant Secretary for Operations, Office of Educational Research and Improvement; and Stephen P. Broughman, Patricia Q. Brown, William J. Fowler, Charlene M. Hoffman, and William C. Sonnenberg of the National Center for Education Statistics.

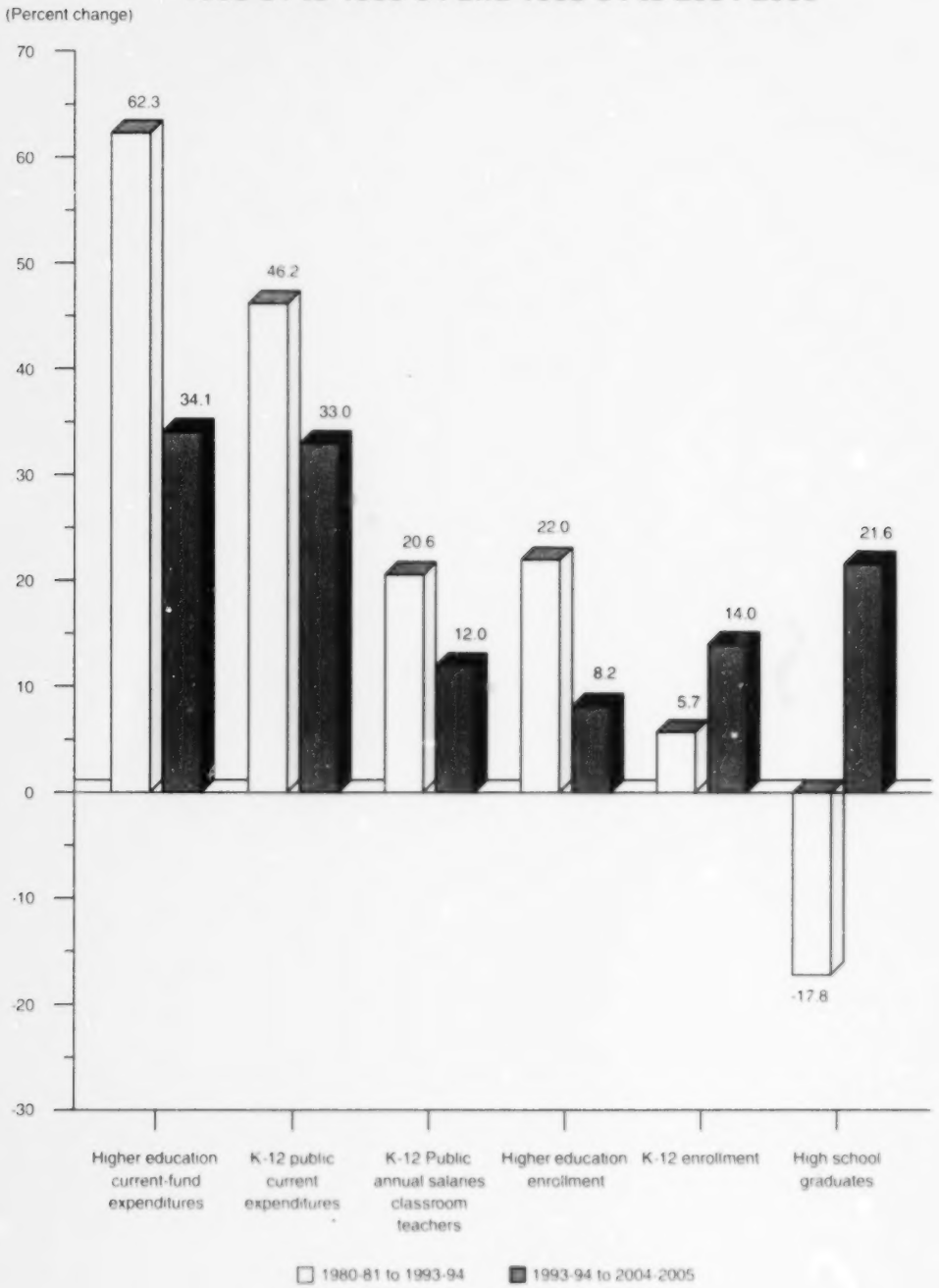
The cover was designed by Philip Carr, Office of the Deputy Assistant Secretary for Operations, Office of Educational Research and Improvement.

Forecast Summary

Chart 1.—Summary of forecast assumptions to 2005

Variable	Middle alternative	Low alternative	High alternative
Demographic Assumptions			
Population	Projections are consistent with the Census Bureau middle series estimates, which assume a fertility rate of 2.15 births per woman by the year 2050, a net immigration of 880,000 per year, and a further reduction in the mortality rate.	Same as middle alternative	Same as middle alternative
18-24 year-old population	Average annual decline of 1.3% to 1997; average annual growth rate of 1.6% through 2005.	Same as middle alternative	Same as middle alternative
25-29 year-old population	Average annual decline of 1.1%	Same as middle alternative	Same as middle alternative
30-34 year-old population	Average annual decline of 1.4%	Same as middle alternative	Same as middle alternative
35-44 year-old population	Average annual growth rate of 0.5%	Same as middle alternative	Same as middle alternative
Public Elementary Enrollment	Average annual growth rate of 0.8%	Same as middle alternative	Same as middle alternative
Public Secondary Enrollment	Average annual growth rate of 1.8%	Same as middle alternative	Same as middle alternative
Undergraduate Enrollment	Average annual growth rate of 0.8%	Average annual growth rate of 0.4%	Average annual growth rate of 1.1%
Graduate Enrollment	Average annual growth rate of 0.2%	Average annual decline of 0.3%	Average annual growth rate of 0.6%
First-professional Enrollment	Average annual decline of 0.1%	Average annual decline of 0.4%	Average annual growth rate of 0.5%
Full-time-equivalent Enrollment	Average annual growth rate of 0.8%	Average annual growth rate of 0.5%	Average annual growth rate of 1.1%
Economic Assumptions			
Disposable Income per Capita in Constant Dollars	Annual percent changes range between 0.6% and 1.7% with an annual compound growth rate of 1.1%.	Annual percent changes range between –0.4% and 1.4% with an annual compound growth rate of 0.6%.	Annual percent changes range between 0.7% and 4.0% with an annual compound growth rate of 1.5%.
Education Revenue Receipts from State Sources per Capita in Constant Dollars	Annual percent changes range between 0.7% and 2.2% with an annual compound growth rate of 1.5%.	Annual percent changes range between 0.5% and 1.8% with an annual compound growth rate of 1.0%.	Annual percent changes range between –0.8% and 4.3% with an annual compound growth rate of 2.0%.
Inflation Rate	Inflation rate ranges between 3.2% and 4.1%.	Inflation rate ranges between 4.0% and 5.4%.	Inflation rate ranges between 2.8% and 3.7%.
Personal Taxes and Nontax Receipts to State and Local Governments per Capita in Constant Dollars	Annual percent changes range between 1.7% and 3.9% with an annual compound growth rate of 2.5%.	Annual percent changes range between 0.2% and 3.9% with an annual compound growth rate of 2.2%.	Annual percent changes range between 1.9% and 6.1% with an annual compound growth rate of 3.1%.
Indirect Business Taxes and Tax Accruals (Excluding Property Taxes) to State and Local Governments per Capita in Constant Dollars	Annual percent changes range between 0.2% and 2.7% with an annual compound growth rate of 1.2%.	Annual percent changes range between 0.1% and 2.5% with an annual compound growth rate of 0.9%.	Annual percent changes range between 0.4% and 4.9% with an annual compound growth rate of 1.7%.
Unemployment Rate (Ages 16 to 19)	Remains between 19.2% and 20.2%.	Same as middle alternative	Same as middle alternative

Figure 1
Percent change in selected education statistics: 1980-81 to 1993-94 and 1993-94 to 2004-2005



Highlights

National

Enrollment

- **Total public and private elementary and secondary enrollment is projected to increase over the projection period**. Total public and private elementary and secondary enrollment is projected to increase from 48.8 million in 1993 to 51.7 million by 1996, surpassing the peak level of 51.3 million attained in 1971. Total enrollment is projected to increase further to 55.9 million by the year 2005, an increase of 14 percent from 1993 (table 1).

- **Over the projection period, enrollment in grades K–8 and grades 9–12 will increase**. Enrollment in grades K–8 is projected to increase from 35.7 million in 1993 to 39.4 million by the year 2005, an increase of 11 percent from 1993. Enrollment in grades 9–12 is projected to increase from 13.2 million in 1993 to 16.4 million by 2005, an increase of 25 percent from 1993 (table 1).

- **Enrollment in institutions of higher education is projected to increase over the projection period**. Higher education enrollment is projected to increase from an estimated 14.8 million in 1993 to 16.1 million by the year 2005, an increase of 9 percent from 1993. Under the low and high alternatives, higher education enrollment is projected to range between 15.3 million and 16.7 million by the year 2005 (table 3).

High School Graduates

- **The number of high school graduates is projected to increase over the projection period**. High school graduates from public and private high schools are projected to increase from 2.5 million in 1992–93 to 3.0 million by 2004–2005, an increase of 20 percent (table 26).

Earned Degrees Conferred

- **Over the projection period, the number of bachelor's degrees is projected to increase**. Under the middle alternative, the number of bachelor's degrees is expected to increase from 1,153,000 in 1992–93 to 1,264,000 by 2004–2005, an increase of 10 percent. Under the low and high alternatives, bachelor's degrees are projected to range between 1,229,000 and 1,315,000 (table 28).

- **The number of doctor's degrees is projected to increase and then decrease over the projection period**. Under the middle alternative, doctor's degrees are expected to increase from 41,900 in 1992–93 to 43,100 by 2004–2005. Under the low and high alternatives, the number of doctor's degrees is projected to range between 37,300 and 48,800 (table 30).

Classroom Teachers

- **The number of classroom teachers is projected to rise over the projection period**. Under the middle alternative, the number of classroom teachers is expected to increase from 2.87 million in 1993 to 3.37 million by the year 2005, an increase of 17 percent. Under the low and high alternatives, the number of classroom teachers is expected to range between 3.27 million and 3.48 million by the year 2005 (table 32).

- **Both elementary and secondary teachers are projected to increase over the projection period**. Under the middle alternative, the number of elementary teachers is projected to increase from 1.77 million in 1993 to 1.98 million by the year 2005. Under the low and high alternatives, elementary teachers are projected to range between 1.92 million and 2.05 million by the year 2005. Under the middle alternative, secondary classroom teachers will increase from 1.10 million in 1993 to 1.39 million by the year 2005. Under the low and high alternatives, secondary teachers are projected to range between 1.35 million and 1.43 million by the year 2005 (table 32).

Expenditures

- **Current expenditures for public elementary and secondary schools are forecast to continue increasing through 2004–2005**. Current expenditures are estimated to have increased 36 percent in constant dollars, between 1979–80 and 1991–92. (1991–92 is the most recent year for which there are actual data.) With the increasing enrollments projected for this period, this trend of increasing current expenditures is expected to continue. Under the middle alternative, a 39-percent increase is projected for the period from 1991–92 to 2004–2005. Under the low alternative, current expenditures are projected to increase by 31 percent; under the high alternative, current expenditures are projected to increase by 47 percent (table 34).

- **Increases in current expenditures per pupil are also forecast to continue increasing for the period 1991–92 to 2004–2005**. The period from 1979–80 until 1991–92 saw current expenditures per pupil in average daily attendance (ADA) increase an estimated 34 percent in constant dollars. Under the middle alternative, current expenditures per pupil are forecast to increase another 18 percent between 1991–92 and 2004–2005. Under the low and high alternatives, the increase in current expenditures is projected to range between 11 and 25 percent. Current expenditures per pupil are forecast to increase less rapidly than total current expenditures due to the increase projected for the number of pupils (table 34).

- **Increases in teacher salaries are forecast**. After a period of declining salaries (teacher salaries in constant dollars fell 1 percent from 1979–80 to 1980–81), teacher salaries rose constantly from 1980–81 to 1989–90. During that time, teacher salaries in constant dollars grew an estimated 21 percent. Reflecting a slowdown in the economy, teacher salaries are estimated to have fallen 1 percent in real terms from 1989–90 to 1993–94. As the current trend of increasing enrollments continues and as the economy begins to grow again, it is forecast that teacher salaries will also begin increasing. Teacher salaries are projected to increase 12 percent between 1993–94 and 2004–2005 under the middle alternative. An 8-percent increase is projected under the low alternative and a 17-percent increase is projected under the high alternative (table 36).

- **Current-fund expenditures are projected to increase in both public and private institutions**. Current-fund expenditures in institutions of higher education rose 54 percent in constant dollars from 1979–80 to 1991–92. (1991–92 is the most recent year for which there are available data.) During that time, current-fund expenditures rose 47 percent in public institutions and 68 percent in private institutions. A further 42-percent increase is projected for the period from 1991–92 to 2004–2005 under the middle alternative for all expenditures (table 37).

State-Level

Public Elementary and Secondary Enrollment

- **Public elementary and secondary school enrollment (kindergarten through grade 12) is expected to increase between 1993 and the year 2005, but these increases will vary by region**. Enrollment will increase most rapidly in the West, where total enrollment is expected to rise 26 percent. Enrollment in the South is projected to increase by 15 percent. The Northeast is expected to rise by 9 percent, while the Midwest is projected to increase by 7 percent (table 46).

- **Changes in public school enrollment are projected to vary by state between 1993 and the year 2005**. Public school enrollment is projected to increase 15 percent between 1993 and the year 2005. Sizable increases are expected in Alaska (25 percent), California (30 percent), Hawaii (30 percent), and Nevada (29 percent). Decreases are expected in District of Columbia (9 percent), Maine (3 percent), North Dakota (5 percent), and West Virginia (1 percent) (table 46).

- **Changes in public school elementary enrollment are projected to vary by state**. Public school elementary enrollment in kindergarten through grade 8 is expected to increase 11 percent between 1993 and the year 2005. Sizable increases in elementary enrollment are projected for Alaska (19 percent), California (25 percent), Hawaii (29 percent), and Nevada (21 percent). Decreases are projected for District of Columbia (17 percent), Iowa (4 percent), Maine (8 percent), and North Dakota (10 percent) (table 48).

- **Changes in public high school enrollment are projected across the Nation**. Public high school enrollment in grades 9 through 12 is projected to increase 25 percent between 1993 and 2005. Increases will occur in all states except West Virginia. Sizable increases are expected in Alaska (40 percent), California (44 percent), Nevada (51 percent), and Washington (41 percent) over the projection period. West Virginia is projected to decrease by 5 percent (table 50).

Public High School Graduates

- **Growth in the number of graduates from public schools will vary by region**. The number of public high school graduates is projected to increase 20 percent between 1992–93 and 2004–2005. Across region, the West is expected to rise by 35 percent. The Northeast is projected to grow by 18 percent. The South and Midwest are expected to increase by 16 percent and 14 percent, respectively, over the projection period (table 52).

- **Increases in the number of public high graduates are projected across the Nation**. Between 1992–93

and 2004–2005, sizable increases are expected in Alaska (44 percent), Arizona (46 percent), Nevada (97 percent), and Washington (44 percent). Decreases are projected for Alabama (4 percent), District of Columbia (10 percent), Louisiana (2 percent), and West Virginia (15 percent) (table 52).

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Introduction

Guide to This Edition

This edition of *Projections of Education Statistics to 2005* provides projections for key education statistics. This edition includes statistics on enrollment, graduates, classroom teachers, and expenditures in elementary and secondary schools and institutions of higher education. For the Nation, the tables, figures, and text contain data on enrollment, teachers, graduates, and expenditures for the past 14 years and projections to the year 2005. For the 50 States and the District of Columbia, the tables, figures, and text contain data on projections of public school elementary and secondary enrollment and public high school graduates to the year 2005. Similar methodologies were used to obtain a uniform set of projections for the 50 States and District of Columbia. These projections are further adjusted to agree with the national projections of public elementary and secondary school enrollment and public high school graduates appearing in this report. These projections reflect estimates and population projections based on the 1990 census. Appendix A describes the methodology and assumptions used to develop the projections. Appendix B contains tables of supplementary data. Data sources are presented in appendix C. Appendix D is a glossary of terms.

Limitations of Projections

Projections of time series usually differ from the reported data due to errors from many sources. This is because of the inherent nature of the statistical universe from which the basic data are obtained and the properties of projection methodologies, which depend on the validity of many assumptions. Therefore, alternative projections are shown for most statistical series to denote the uncertainty involved in making projections. These alternatives are not statistical confidence limits, but instead represent judgments made by the authors as to reasonable upper and lower bounds. Alternative projections are presented for higher education enrollment, classroom teachers, earned degrees conferred, and expenditures of public elementary and secondary schools and institutions of higher education.

Chapter 1

Elementary and Secondary Enrollment

Between 1993 and the year 2005, enrollment will increase in elementary and secondary schools. The primary reason for the increase is the rising number of annual births since 1977—sometimes referred to as the baby boom echo (figure 2). As a result, increases in the 3- to 5-year-old population are projected through 1996 and increases in the school-age populations are expected over the next 12 years (figures 3, 4, and 5). In 1994 and beyond, increases in the 5- to 13-year-old population, which began in the mid-1980s, are expected to continue the growth in elementary enrollment. The increase in the 14- to 17-year-old population, which started in 1991, will continue the growth in secondary enrollment over the projection period.

Elementary and Secondary Enrollment

Reflecting the decline in the 5- to 17-year-old population, total enrollment in public and private elementary and secondary schools decreased from 46.2 million in 1980 to 44.9 million in 1984, a decrease of 3 percent (table 1 and figure 6). After reaching a low of 44.9 million in 1984, total enrollment reversed its downward trend in response to an increase in the 5- to 17-year-old population and rose to 48.8 million in 1993, an increase of 9 percent from 1984. Total enrollment is projected to continue to increase to 51.7 million in 1996, surpassing the peak level of 51.3 million attained in 1971. Total enrollment is projected to increase further to 55.9 million by the year 2005, an increase of 14 percent from 1993.

Enrollment, by Control of School

Enrollment in public elementary and secondary schools decreased from 40.9 million in 1980 to 39.2 million in 1984, a decrease of 4 percent (figure 7). Since then, enrollment in public schools has increased to an estimated 43.4 million in 1993, an increase of 11 percent from 1984. Enrollment in public schools is projected to increase to 49.7 million by the year 2005, an increase of 15 percent from 1993.

Since the mid-1970s, enrollment in private elementary and secondary schools has fluctuated between 5.0 million and 5.7 million. In 1993, an estimated 5.5 million students were enrolled in private elementary and secondary schools. Enrollment in private schools is projected to increase to around 6.2 million by the year 2005, an increase of 14 percent from 1993.

Projections of enrollments in public elementary and secondary schools are based on projected grade retention rates. The retention rates for grades 2 through 10 are all close to 100 percent. Rates for grade 6 to grade 7 and grade 8 to grade 9 are significantly over 100 percent. Traditionally, these are the grades in which large numbers of private elementary students transfer to public secondary schools. The retention rates for grades 11 to 12 are about 90 percent. The grade retention rates are assumed to be constant throughout the projection period.

Projections of private school enrollment were derived using public school enrollment data for 1993. The ratio of private school enrollment to public school enrollment was calculated for grades K–8 and grades 9–12. These ratios were held constant over the projection period and applied to projections of public school enrollment for grades K–8 and 9–12 to yield projections of private school enrollment. This method assumes that the future pattern in the trend of private school enrollment will be the same as that in public school enrollment. However, a number of factors could alter the assumption of constant ratios over the projection period.

Enrollment, by Grade Group

Between 1980 and 1984, enrollment in grades K–8 fell from 31.7 million to 31.2 million, a decrease of 1 percent. Then, this number increased to 35.7 million in 1993, an increase of 14 percent from 1984. Enrollment in grades K–8 is projected to increase to 39.4 million by the year 2005, an increase of 11 percent from 1993. Enrollment in grades 9–12 decreased from 14.6 million in 1980 to 12.5 million in 1990, a decrease of 14 percent. It then increased to 13.2 million in 1993. By the year 2005, enrollment in grades 9–12 is projected to continue to rise to 16.4 million, an increase of 25 percent from 1993. Since enrollment rates for the school-age populations are nearly 100 percent for elementary grades and junior-high grades and close to 90 percent for high school grades, the historical and projected patterns of decline and growth in enrollment in grades K–8 and grades 9–12 reflect changes in the sizes of the 5- to 13-year-old population and the 14- to 17-year-old population.

Enrollment by grade group in public elementary and secondary schools shows trends similar to those of total enrollment. Enrollment in grades K–8 of public schools decreased from 27.6 million in 1980 to 26.9 million in 1984, a decrease of 3 percent. It then increased to 31.4 million in 1993. Enrollment in grades K–8 of public schools

is projected to increase to 34.7 million by the year 2005, an increase of 11 percent from 1993. Enrollment in grades 9–12 of public schools decreased from 13.2 million in 1980 to 11.3 million in 1990, a decrease of 14 percent. Then, it increased to 12.0 million in 1993. Thereafter, 9–12 enrollment is expected to increase to 14.9 million by the year 2005, an increase of 25 percent from 1993.

Enrollment by grade group in private elementary and secondary schools will show patterns similar to trends in enrollment in public schools over the projection period by virtue of the private school enrollment projection methodology. The methodology assumes that private school enrollment will reflect trends in public school enrollment. Enrollment in grades K–8 of private schools is projected to increase from 4.3 million in 1993 to 4.7 million by the year 2005, an increase of 11 percent. Enrollment in grades 9–12 of private schools is projected to increase from 1.2 million in 1993 to 1.5 million by the year 2005, an increase of 25 percent.

Enrollment, by Organizational Level

Enrollments may also be aggregated by the level of school attended by students. The reported enrollment in elementary schools is smaller than enrollment in kindergarten through grade 8 because it excludes enrollment in grades 7 and 8 in secondary schools. Enrollment in elementary schools decreased from 28.2 million in 1980 to 28.0 million in 1983, a decrease of 1 percent (table 2). This number increased by 16 percent to 32.6 million in 1993. Enrollment in elementary schools is expected to continue to increase to 36.1 million in the year 2002, before declining to 35.7 million by the year 2005, an increase of 10 percent from 1993. Enrollment in secondary schools, including 7th and 8th graders in secondary schools, decreased from 18.0 million in 1980 to 15.3 million in 1990, a decrease of 15 percent. Then, this number increased by 6 percent to 16.3 million in 1993. Enrollment in secondary schools is projected to rise to 20.1 million by the year 2005, an increase of 24 percent from 1993.

Figure 2
Annual number of births, with projections: 1950 to 2005

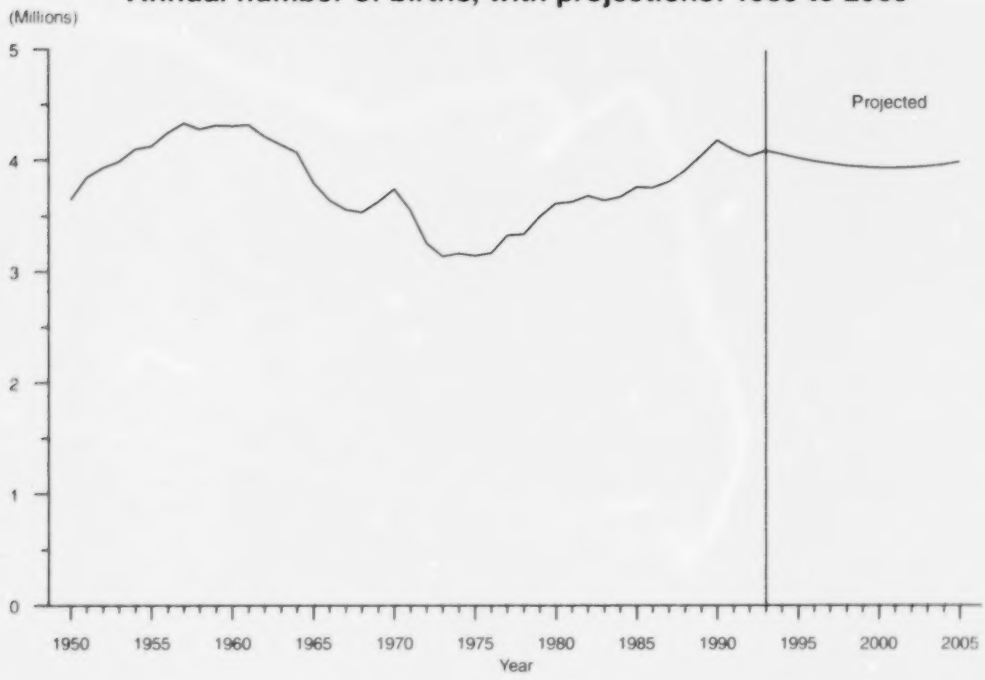

Figure 3
3- to 5-year-old population, with projections: 1980 to 2005

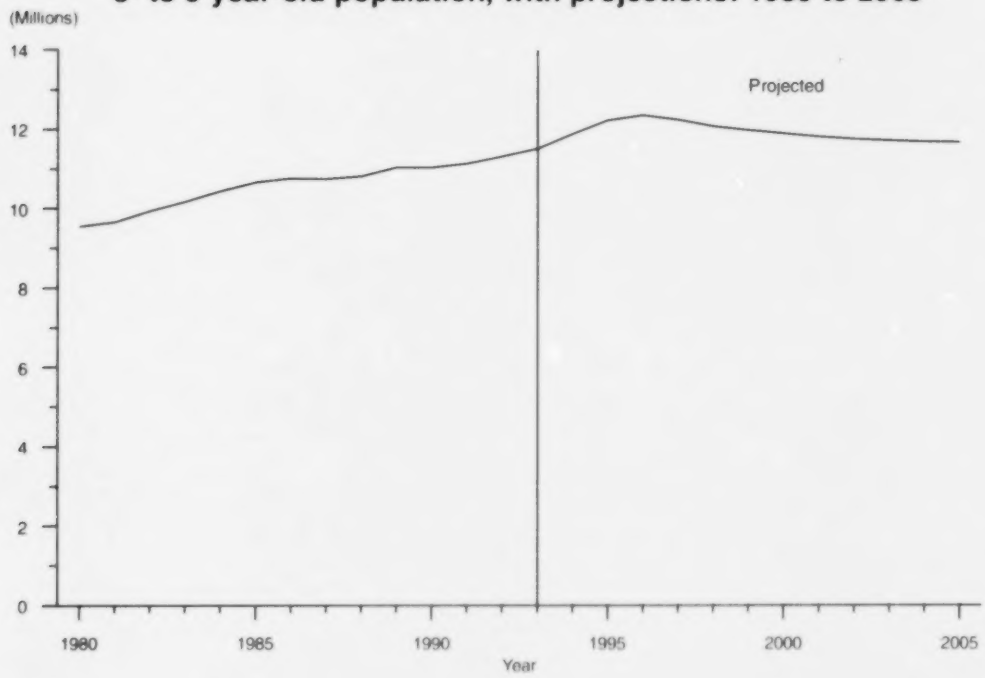

Figure 4
5- to 17-year-old population, with projections: 1980 to 2005

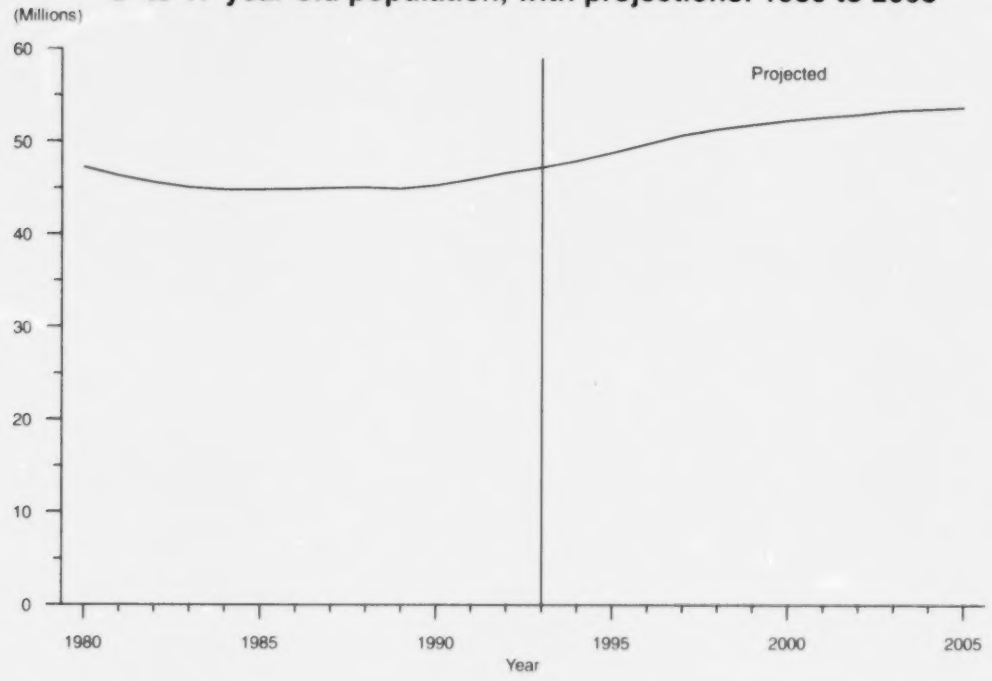

Figure 5
School-age populations, with projections: 1980 to 2005

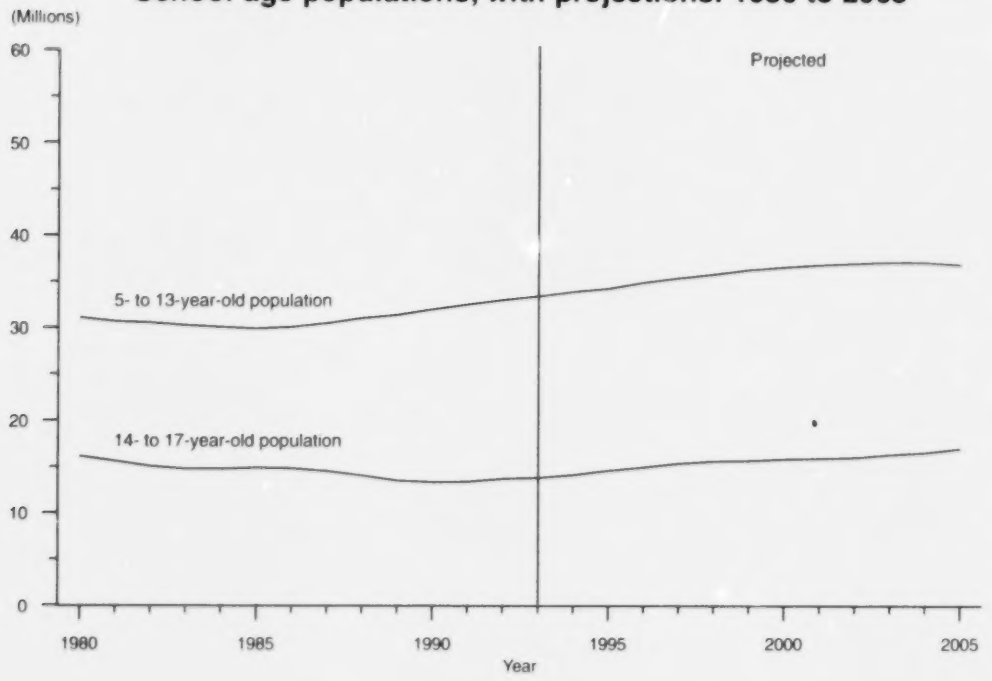

Figure 6
Enrollment in elementary and secondary schools, by grade level, with projections: Fall 1980 to fall 2005

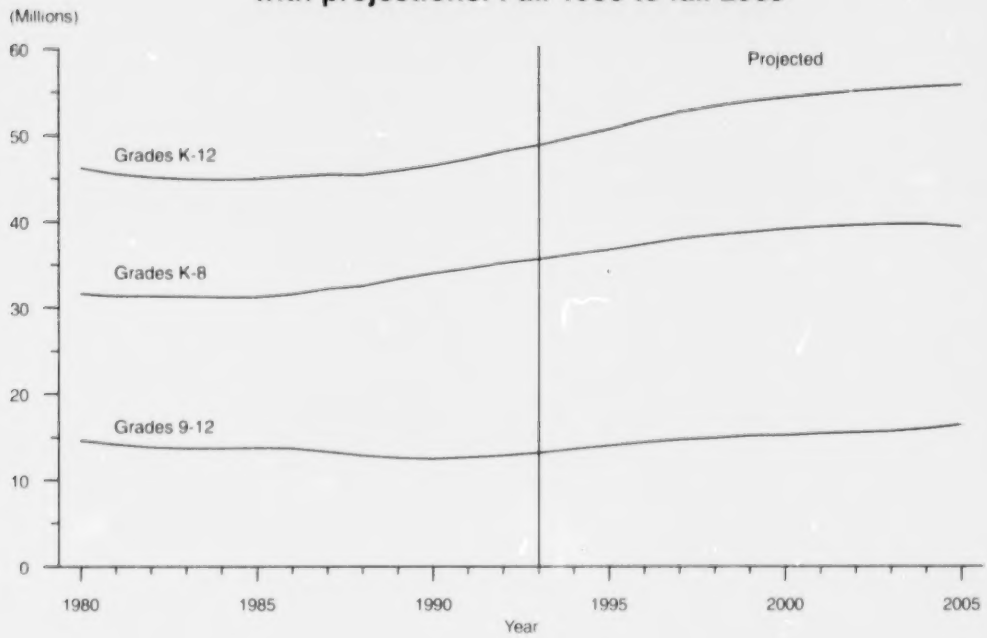

Figure 7
Enrollment in elementary and secondary schools, by control of institution, with projections: Fall 1980 to fall 2005

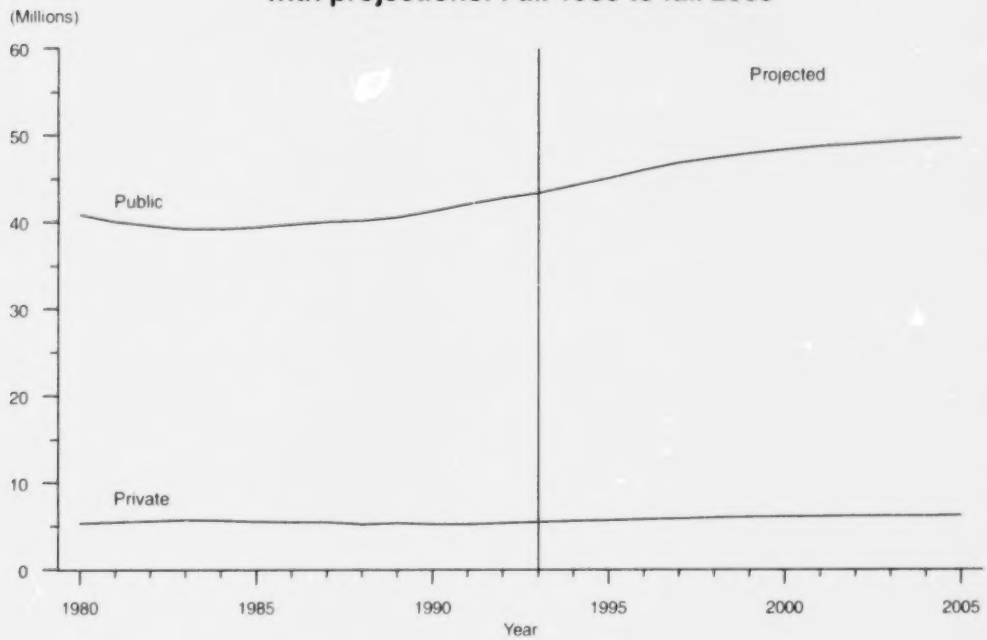

Table 1.—Enrollment in grades K–8[1] and 9–12 of elementary and secondary schools, by control of institution, with projections: 50 States and D.C., fall 1980 to fall 2005

(In thousands)

Year	Total			Public			Private		
	K–12[1]	K–8[1]	9–12	K–12[1]	K–8[1]	9–12	K–12[1]	K–8[1]	9–12
1980	46,208	31,639	14,570	40,877	27,647	13,231	5,331	3,992	1,339
1981	45,544	31,380	14,164	40,044	27,280	12,764	[2]5,500	4,100	1,400
1982	45,166	31,361	13,805	39,566	27,161	12,405	[2]5,600	4,200	1,400
1983	44,967	31,296	13,671	39,252	26,981	12,271	5,715	4,315	1,400
1984	44,908	31,205	13,704	39,208	26,905	12,304	[2]5,700	4,300	1,400
1985	44,979	31,229	13,750	39,422	27,034	12,388	5,557	4,195	1,362
1986	45,205	31,536	13,669	39,753	27,420	12,333	[2]5,452	4,116	1,336
1987	45,488	32,165	13,323	40,008	27,933	12,076	[2]5,479	4,232	1,247
1988	45,430	32,537	12,893	40,189	28,501	11,687	[2]5,241	4,036	1,206
1989	45,898	33,314	12,583	40,543	29,152	11,390	[2]5,355	4,162	1,193
1990	46,448	33,973	12,475	41,217	29,878	11,338	[2]5,232	4,095	1,137
1991	47,246	34,580	12,666	42,047	30,506	11,541	[2]5,199	4,074	1,125
1992	48,110	35,209	12,901	42,735	30,997	11,738	[2]5,375	4,212	1,163
1993	48,824	35,652	13,172	[3]43,353	31,372	11,981	[2]5,471	4,280	1,191
					Projected				
1994	49,813	36,194	13,620	44,237	31,849	12,388	5,576	4,345	1,232
1995	50,709	36,698	14,011	45,037	32,293	12,744	5,672	4,405	1,267
1996	51,745	37,346	14,399	45,960	32,863	13,097	5,785	4,483	1,302
1997	52,686	37,979	14,707	46,797	33,420	13,377	5,889	4,559	1,330
1998	53,367	38,439	14,928	47,403	33,825	13,578	5,964	4,614	1,350
1999	53,937	38,789	15,148	47,911	34,133	13,778	6,026	4,656	1,370
2000	54,402	39,152	15,250	48,323	34,452	13,871	6,079	4,700	1,379
2001	54,807	39,412	15,395	48,684	34,681	14,003	6,123	4,731	1,392
2002	55,155	39,611	15,544	48,994	34,856	14,138	6,161	4,755	1,406
2003	55,413	39,733	15,680	49,225	34,963	14,262	6,188	4,770	1,418
2004	55,681	39,696	15,985	49,470	34,931	14,539	6,211	4,765	1,446
2005	55,871	39,437	16,434	49,651	34,703	14,948	6,220	4,734	1,486

[1] Includes most kindergarten and some nursery school enrollment.
[2] Estimated on the basis of past data.
[3] Estimate.
NOTE: Projected.

NOTE: Some data have been revised from previously published figures. Projections are based on data through 1992. Because of rounding, details may not add to totals.

SOURCE: U.S. Department of Education, National Center for Education Statistics, *Statistics of Public Elementary and Secondary Schools*; Common Core of Data surveys; "Private Elementary and Secondary Education, 1983: Enrollment, Teachers, and Schools," *NCES Bulletin*, December 1984; 1985 Private School Survey; "Key Statistics for Private Elementary and Secondary Education: School Year 1988–89," *Early Estimates*; "Key Statistics for Private Elementary and Secondary Education: School Year 1990–91," *Early Estimates*; Public and Private Elementary and Secondary Education Statistics: School Year 1991–92," *Early Estimates*; "Public and Private Elementary and Secondary Education Statistics: School Year 1992–93," *Early Estimates*; and "Public Elementary and Secondary Education Statistics: School Year 1993–94," *Early Estimates*. (This table was prepared July 1994.)

Table 2.—Enrollment in elementary and secondary schools, by organizational level and control of institution, with projections: 50 States and D.C., fall 1980 to fall 2005

(In thousands)

Year	Total			Public			Private		
	K-12[1]	Elementary	Secondary	K-12[1]	Elementary	Secondary	K-12[1]	Elementary	Secondary
1980	46,208	28,188	18,020	40,877	24,196	16,681	5,331	3,992	1,339
1981	45,544	28,137	17,407	40,044	24,037	16,007	[2]5,500	4,100	1,400
1982	45,166	28,016	17,149	39,566	23,816	15,749	[2]5,600	4,200	1,400
1983	44,967	27,950	17,017	39,252	23,635	15,617	5,715	4,315	1,400
1984	44,908	28,042	16,866	39,208	23,742	15,466	[2]5,700	4,300	1,400
1985	44,979	28,330	16,649	39,422	24,135	15,287	5,557	4,195	1,362
1986	45,205	28,613	16,592	39,753	24,497	15,256	[2]5,452	4,116	1,336
1987	45,488	29,447	16,040	40,008	25,215	14,793	[2]5,479	4,232	1,247
1988	45,430	29,776	15,654	40,189	25,740	14,448	[2]5,241	4,036	1,206
1989	45,898	30,570	15,328	40,543	26,408	14,135	[2]5,355	4,162	1,193
1990	46,448	31,145	15,304	41,217	27,050	14,167	[2]5,232	4,095	1,137
1991	47,246	31,669	15,577	42,047	27,595	14,452	[2]5,199	4,074	1,125
1992	48,110	32,258	15,852	42,735	28,046	14,689	[2]5,375	4,212	1,163
1993	48,824	32,559	16,265	[3]43,353	28,279	15,074	[2]5,471	4,280	1,191
					Projected				
1994	49,813	33,025	16,787	44,237	28,681	15,556	5,576	4,345	1,232
1995	50,709	33,464	17,222	45,037	29,080	15,956	5,672	4,405	1,267
1996	51,745	34,102	17,640	45,960	29,621	16,339	5,785	4,483	1,302
1997	52,686	34,684	17,999	46,797	30,127	16,670	5,889	4,559	1,330
1998	53,367	35,127	18,237	47,403	30,515	16,888	5,964	4,614	1,350
1999	53,937	35,464	18,469	47,911	30,810	17,101	6,026	4,656	1,370
2000	54,402	35,781	18,618	48,323	31,083	17,241	6,079	4,700	1,379
2001	54,807	36,000	18,803	48,684	31,271	17,413	6,123	4,731	1,392
2002	55,155	36,116	19,032	48,994	31,364	17,629	6,161	4,755	1,406
2003	55,413	36,096	19,312	49,225	31,329	17,896	6,188	4,770	1,418
2004	55,681	35,961	19,715	49,470	31,199	18,272	6,211	4,765	1,446
2005	55,871	35,737	20,128	49,651	31,006	18,644	6,220	4,734	1,486

[1] Includes most kindergarten and some nursery school enrollment.
[2] Estimated on the basis of past data.
[3] Estimate.
[4] Projected.

NOTE: Some data have been revised from previously published figures. Projections are based on data through 1992. Because of rounding, details may not add to totals.

SOURCE: U.S. Department of Education, National Center for Education Statistics, *Statistics of Public Elementary and Secondary Schools*; Common Core of Data surveys; "Private Elementary and Secondary Education, 1983: Enrollment, Teachers, and Schools," *NCES Bulletin*, December 1984; 1985 Private School Survey; "Key Statistics for Private Elementary and Secondary Education: School Year 1988–89," *Early Estimates*; "Key Statistics for Private Elementary and Secondary Education: School Year 1990–91," *Early Estimates*; Public and Private Elementary and Secondary Education Statistics: School Year 1991–92," *Early Estimates*; "Public and Private Elementary and Secondary Education Statistics: School Year 1992–93," *Early Estimates*; and "Public Elementary and Secondary Education Statistics: School Year 1993–94," *Early Estimates*. (This table was prepared July 1994.)

Chapter 2

Higher Education Enrollment

Enrollment in institutions of higher education* is expected to rise between 1993 and the year 2005. The growth is due in part to the rising enrollment rates of most age cohorts. Changes in college-age populations will also affect enrollment levels over the next 12 years (figures 8 and 9). Over the projection period, the 25- to 29-year-old population is projected to decrease by 12 percent, and the 30- to 34-year-old population will decline by 16 percent. However, following a decline of 5 percent from 1993 to 1997, the 18- to 24-year-old population will begin to increase starting in 1998 and rise by 14 percent by the end of the projection period. On the other hand, the 35- to 44-year-old population will increase by 7 percent over the projection period despite a slight decrease between 2000 and 2005. The increases in the youngest and oldest populations are expected to offset the loss of students from the 25- to 29-year-old and 30- to 34-year-old populations, thereby contributing to the increases in college enrollment levels in 1994 and beyond.

Higher education enrollment projections were based on projected enrollment rates, by age and sex, which were then applied to population projections by age and sex developed by the Bureau of the Census. The middle series population projections, which assume middle fertility and net immigration, were used. The enrollment rates were projected by taking into account the most recent trends, as well as the effects of economic conditions and demographic changes on the enrollment rates of the younger age cohorts.

Three alternative projections of enrollment in institutions of higher education were developed to indicate the range of possible outcomes. The middle alternative assumes that the enrollment rates of most of the 18- to 24-year-olds will increase over the projection period, while those for older age groups are expected to remain constant at levels consistent with the most recent enrollment rates or increase slightly. In particular, the enrollment rates of 18-year-old men and 19-year-old men by attendance status were projected as a function of unemployment rate and disposable income per capita. The part-time enrollment rates of 20-year-old men and 21-year-old men were projected as a function of disposable income per capita. The enrollment rates of 18-year-old women by attendance status were projected as a function of disposable income per capita. The full-time enrollment rates of 19-year-old women and 21-year-old women were projected as a function of disposable income per capita. The low alternative assumes that age-specific enrollment rates will either equal the middle alternative or change at a slower rate, based on past trends. Under the high alternative, the age-specific enrollment rates are projected to equal the middle alternative or increase at a faster rate, based on past trends for most age groups.

Total Higher Education Enrollment

In 1980, there were 12.1 million students enrolled in institutions of higher education. In the late 1970s and early 1980s, older students, primarily women and part-time students, began to enroll in greater numbers. As a result, college enrollment increased to 12.5 million in 1983. In 1984 and 1985, enrollment declined to 12.2 million. By 1993, it had risen to an estimated 14.8 million, exceeding its previous level attained in 1983 by nearly 2.3 million students (table 3 and figure 10). Under the middle alternative, college enrollment is projected to rise to 16.1 million by the year 2005, an increase of 9 percent from 1993. This will represent an average annual growth rate of 0.7 percent over the projection period, less than the growth rate of 1.5 percent during the 1980–93 period. Moreover, enrollment will increase at a faster rate toward the end of the projection period. Between 1993 and 1999, college enrollment is projected to increase at an average annual growth rate of 0.7 percent. Between 1999 and 2005, it will grow at an average annual growth rate of 0.8 percent (figure 11). Although the 18- to 24-year-old population is projected to decline until 1997, a decrease of 5 percent from 1993, this population will increase 14 percent by the year 2005. This increase in the younger population, along with enrollment rates remaining above 1993 levels and the continued increases in the number of older students, is expected to offset the decline in the number of 25- to 34-year-olds enrolled in college.

Under the low alternative, college enrollment is projected to increase from an estimated 14.8 million in 1993 to 15.3 million by the year 2005. This will represent an average annual growth rate of 0.3 percent, for an increase of 3 percent over the projection period. This alternative assumes that enrollment rates will either remain the same as the middle alternative or increase at a slower rate.

Under the high alternative, college enrollment is expected to increase from an estimated 14.8 million in 1993 to 16.7 million by the year 2005. This will represent an average annual growth rate of 1.0 percent, for an increase of 13 percent over the projection period. This level is

* This term applies mainly to those institutions that provide study beyond secondary school and that offer programs terminating in an associate, baccalaureate, or higher degree.

expected to be maintained during 1994 and beyond if the enrollment rates remain well above their 1993 levels.

For key enrollment statistics, the following tabulations show: (1) the average annual rate of growth (in percent) for 1980–93 and alternative projected rates of change for 1993–2005 and (2) rates of change for 1980–87 and 1987–93 and the middle alternative projected rates of change for 1993–99 and 1999–2005.

Average annual rate of change (in percent)

	1980–93	1993–2005		
		Low	Middle	High
Total	1.5	0.3	0.7	1.0
Men	1.0	0.4	0.8	1.1
Women	2.1	0.2	0.7	1.0
Full-time	1.1	0.6	0.9	1.2
Part-time	2.1	-0.2	0.5	0.8
Public	1.6	0.3	0.7	1.0
Private	1.5	0.3	0.7	1.0
4-year	1.4	0.3	0.7	1.1
2-year	1.8	0.2	0.7	1.0
Undergraduate	1.5	0.4	0.8	1.1
Graduate	2.2	-0.3	0.2	0.6
First-professional	0.6	-0.4	-0.1	0.5
Full-time-equivalent	1.4	0.5	0.8	1.1

Average annual rate of change (in percent)

(Middle alternative projections)

	1980–87	1987–93	Projected	
			1993–99	1999–2005
Total	0.8	2.4	0.7	0.8
Men	0.1	1.9	0.5	1.0
Women	1.3	2.9	0.8	0.5
Full-time	0.3	2.2	0.5	1.3
Part-time	1.5	2.8	0.9	0.1
Public	0.8	2.5	0.7	0.7
Private	0.8	2.3	0.5	0.9
4-year	0.8	2.1	0.5	0.9
2-year	0.8	3.0	0.8	0.6
Undergraduate	0.8	2.3	0.7	0.9
Graduate	1.1	3.4	0.4	-0.1
First-professional	-0.5	2.0	-0.4	0.2
Full-time-equivalent	0.7	2.3	0.6	1.0

Enrollment, by Sex of Student

Women played a major role in the increase of enrollment between 1980 and 1993. The enrollment of women in college increased from 6.2 million in 1980 to an estimated 8.1 million in 1993, representing an average annual growth rate of 2.1 percent, for a 30-percent increase over the period (figure 12). Under the middle alternative, enrollment of women is expected to increase to 8.8 million by the year 2005, an increase of 8 percent from 1993. This will represent a growth rate of 0.7 percent per year, considerably less than the growth rate of 2.1 percent for the 1980–93 period. The rate of growth will be higher during the first half of the projection period (1993–99) than during the second half (1999–2005), 0.8 percent per year versus 0.5 percent per year (figure 13). As a share of total college enrollment, women were 55 percent of all college students in 1993 compared with 51 percent in 1980. Women are expected to maintain their share of 55 percent of college enrollment in the year 2005. Under the low and high alternatives, enrollment of women is projected to range between 8.3 million and 9.1 million by the year 2005, representing growth rates of 0.2 percent and 1.0 percent, respectively.

Despite fluctuations in enrollment to 1985, the enrollment of men in college has since increased from 5.9 million in 1986 to an estimated 6.6 million in 1993. Over the 1980–93 period, the growth rate of 1.0 percent per year for men was slightly less than half of the rate for women. Under the middle alternative, enrollment of men is expected to increase to 7.3 million by the year 2005, a 10-percent increase from 1993, for an average annual growth rate of 0.8 percent. The growth rate of enrollment of men will be lower in the first half of the projection period than in the second half, 0.5 percent per year versus 1.0 percent per year. Under the low and high alternatives, the number of men enrolled in college is projected to range between 7.0 million and 7.6 million by the year 2005, representing growth rates of 0.4 percent and 1.1 percent, respectively.

Enrollment, by Attendance Status

Full-time enrollment increased from 7.1 million in 1980 to an estimated 8.2 million in 1993 (figure 14). This is an average annual growth rate of 1.1 percent, for an increase of 16 percent over the period. Under the middle alternative, full-time enrollment is expected to increase another 11 percent to 9.1 million by the year 2005, representing an average annual growth rate of 0.9 percent. Over the projection period, the growth rate for the 1993–99 period will be lower than the growth rate for the 1999–2005 period, 0.5 percent per year versus 1.3 percent per year (figure 15). This is probably due to the increased enrollment of 18- to 24-year-olds, who will tend to be enrolled full-time. Under the low and high alternatives, full-time enrollment is projected to range between 8.9 million and 9.5 million by the year 2005.

Part-time enrollment increased from 5.0 million in 1980 to an estimated 6.5 million in 1993. This is an average annual growth rate of 2.1 percent, for an increase of 31 percent over the period. Under the middle alternative, part-time enrollment is expected to increase at an average annual growth rate of 0.5 percent and reach 6.9 million by the year 2005, for an increase of 6 percent over the projection period. Unlike full-time enrollment, the growth rate for part-time enrollment during the 1993–99 period will be more than the growth rate for the 1999–2005 period, 0.9 percent versus 0.1 percent. Under the low and high alternatives, part-time enrollment is projected to range between

6.4 million and 7.2 million, representing a rate of decline of 0.2 percent and a growth rate of 0.8 percent, respectively.

Enrollment, by Control of Institution

Enrollment in public institutions grew from 9.5 million in 1980 to an estimated 11.6 million in 1993, increasing at an average annual rate of 1.6 percent, for an increase of 22 percent over the period (figure 16). Under the middle alternative, public enrollment is expected to increase to 12.6 million by 2005, rising by an average annual growth rate of 0.7 percent, for an increase of 9 percent over the projection period. During the projection period, enrollment in public institutions is projected to increase at an average annual growth rate of 0.7 percent during the 1993–99 period and 0.7 percent during the 1999–2005 period (figure 17). Enrollment in public 4-year institutions is projected to increase from an estimated 6.1 million in 1993 to 6.7 million by the year 2005. Enrollment in public 2-year institutions is expected to increase from an estimated 5.4 million in 1993 to 5.9 million by the year 2005.

Under the low and high alternatives, enrollment in public institutions is expected to range between 11.9 million and 13.1 million by the year 2005. For the low alternative, this is a projected average annual growth rate of 0.3 percent over the projection period. For the high alternative, it will be a growth rate of 1.0 percent.

Enrollment in private institutions increased from 2.6 million in 1980 to an estimated 3.1 million in 1993, increasing at an average annual growth rate of 1.5 percent, for an increase of 21 percent over the period. Under the middle alternative, private enrollment is expected to increase to 3.5 million by 2005, rising by an average annual growth rate of 0.7 percent, for an increase of 9 percent over the projection period. During the projection period, enrollment in private institutions is projected to increase at an annual growth rate of 0.5 percent during the 1993–99 period and 0.9 percent during the 1999–2005 period. Enrollment in private 4-year institutions is expected to increase from an estimated 2.9 million in 1993 to 3.2 million by the year 2005. Enrollment in private 2-year institutions is projected to increase from an estimated 255,000 in 1993 to 282,000 by the year 2005.

Under the low and high alternatives, enrollment in private institutions is expected to range between 3.3 million and 3.6 million by the year 2005. For the low alternative, this is a projected average annual growth rate of 0.3 percent over the projection period. For the high alternative, it will be a growth rate of 1.0 percent.

Enrollment, by Type of Institution

Enrollment in 4-year institutions increased from 7.6 million in 1980 to an estimated 9.1 million in 1993, increasing at an average annual growth rate of 1.4 percent, for a 20-percent increase over the period (table 4 and figure 18). Under the middle alternative, enrollment in 4-year institutions is expected to rise to 9.9 million by the year 2005, increasing at an average annual growth rate of 0.7 percent, for a 9-percent increase over the projection period. During the projection period, enrollment in 4-year institutions is projected to increase at an annual growth rate of 0.5 percent during the 1993–99 period and 0.9 percent during the 1999–2005 period (figure 19).

Under the low and high alternatives, enrollment in 4-year institutions is expected to range between 9.4 million and 10.3 million by the year 2005. For the low alternative, this is a projected average annual growth rate of 0.3 percent over the projection period. For the high alternative, it will be a growth rate of 1.1 percent.

Enrollment in 2-year institutions rose from 4.5 million in 1980 to an estimated 5.7 million in 1993, increasing at an average annual growth rate of 1.8 percent per year, for a 26-percent increase over the period (table 5). Under the middle alternative, enrollment in 2-year institutions is expected to rise to 6.2 million by the year 2005, increasing at an average annual growth rate of 0.7 percent, for a 9-percent increase over the projection period. During the projection period, enrollment in 2-year institutions is projected to increase at an annual growth rate of 0.8 percent during the 1993–99 period and 0.6 percent during the 1999–2005 period.

Under the low and high alternatives, enrollment in 2-year institutions is expected to range between 5.8 million and 6.4 million by the year 2005. For the low alternative, this is a projected average annual growth rate of 0.2 percent over the projection period. For the high alternative, it will be a growth rate of 1.0 percent.

Enrollment, by Level

Undergraduate enrollment increased from 10.5 million in 1980 to an estimated 12.7 million in 1993, increasing at an average annual growth rate of 1.5 percent, for a 21-percent increase over the period (table 14 and figure 20). Under the middle alternative, undergraduate enrollment is expected to increase to 14.0 million by the year 2005, at a growth rate of 0.8 percent per year, for a 10-percent increase over the projection period. During the projection period, undergraduate enrollment is projected to increase at an annual growth rate of 0.7 percent during the 1993–99 period and 0.9 percent during the 1999–2005 period (figure 21).

Under the low and high alternatives, undergraduate enrollment is expected to range between 13.3 million and 14.5 million by the year 2005. For the low alternative, this is a projected average annual growth rate of 0.4 percent over the projection period. For the high alternative, it will be a growth rate of 1.1 percent.

Graduate enrollment rose from 1.3 million in 1980 to an estimated 1.8 million in 1993, at an average annual growth rate of 2.2 percent, for a 32-percent increase over the period (table 17 and figure 22). Under the middle alternative, graduate enrollment is expected to increase to 1.8 million by the year 2005, increasing at an average

annual growth rate of 0.2 percent, for a 2-percent increase over the projection period. During the projection period, graduate enrollment is projected to increase at an annual growth rate of 0.4 percent during the 1993–99 period and decrease at a rate of 0.1 percent during the 1999–2005 period (figure 23).

Under the low and high alternatives, graduate enrollment is expected to range between 1.7 million and 1.9 million by the year 2005. For the low alternative, this is a projected average annual decline of 0.3 percent over the projection period. For the high alternative, it will be a growth rate of 0.6 percent.

First-professional enrollment increased from 278,000 in 1980 to an estimated 302,000 in 1993, an average annual growth rate of 0.6 percent, for a 9-percent increase over the period (table 20 and figure 22). Under the middle alternative, first-professional enrollment is expected to increase to 305,000 in 1995. Thereafter, this number will decline to 291,000 in 2003 before rising to 297,000 by 2005. This represents an average annual decline of 0.1 percent over the projection period, a 2-percent decrease from 1993. During the projection period, first-professional enrollment is projected to decline at an average annual rate of 0.4 percent during the 1993–99 period and a growth rate of 0.2 percent during the 1999–2005 period (figure 23).

Under the low and high alternatives, first-professional enrollment is expected to range between 287,000 and 322,000 by the year 2005. For the low alternative, this is a projected average annual decline of 0.4 percent over the projection period. For the high alternative, it will be a growth rate of 0.5 percent.

Full-Time-Equivalent Enrollment

Full-time-equivalent enrollment increased from 8.8 million in 1980 to an estimated 10.6 million in 1993, increasing at an average annual rate of growth of 1.4 percent, for a 20-percent increase over the period (table 23 and figure 24). Under the middle alternative, full-time-equivalent enrollment is expected to increase to 11.6 million by the year 2005, increasing at an average annual growth rate of 0.8 percent, for a 10-percent increase over the projection period. During the projection period, full-time-equivalent enrollment is projected to increase at an annual growth rate of 0.6 percent during the 1993–99 period and 1.0 percent during the 1999–2005 period (figure 25).

The full-time-equivalent of undergraduate enrollment in 4-year institutions, which was an estimated 5.9 million in 1993, will be 6.7 million by the year 2005. The full-time-equivalent of undergraduate enrollment in 2-year institutions, which was an estimated 3.3 million in 1993, will be 3.6 million by the year 2005.

In public institutions, full-time-equivalent enrollment, which was an estimated 8.0 million in 1993, will be 8.8 million by the year 2005. In private institutions, full-time-equivalent enrollment, which was an estimated 2.6 million in 1993, will be 2.8 million by the year 2005.

Under the low and high alternatives, full-time-equivalent enrollment in all institutions is expected to range between 11.2 million and 12.1 million by the year 2005. For the low alternative, this is a projected average annual growth rate of 0.5 percent over the projection period. For the high alternative, it will be a growth rate of 1.1 percent.

Enrollment, by Age

The alternative projections of higher education enrollment by age, sex, and attendance status are shown in table 6 (middle alternative), table 7 (low alternative), and table 8 (high alternative). These projections are based on age-specific enrollment data from the Bureau of the Census and enrollment data from NCES.

Under the middle alternative, the period from 1985 to 2005 will be one of change in the age distribution of college students. The enrollment of students who are 18- to 24-years old increased from 6.9 million in 1985 to an estimated 8.0 million in 1993, an increase of 16 percent (figure 26). This number is expected to increase to 9.3 million by the year 2005, an increase of 15 percent from 1993. As a result, the proportion of students who are 18- to 24-years old, which fell from 56.5 percent in 1985 to 54.5 percent in 1993, is projected to be 57.5 percent by the year 2005.

On the other hand, the enrollment of students who are 25 years old and over increased from 5.1 million in 1985 to an estimated 6.5 million in 1993, an increase of 28 percent. This number is projected to remain around 6.5 million by the year 2005. The projected stability in the enrollment of students 25 years old and over is due, in part, to the declines in the 25- to 29-year-old population and the 30- to 34-year-old population over the projection period. However, the 35- to 44-year-old population will continue to increase for most of the projection period, contributing to the stable enrollment during this period. Over the projection period, the proportion of students 25 years old and over rose from 41.6 percent in 1985 to 44.3 percent in 1993. This proportion is projected to be 40.7 percent by the year 2005.

Figure 8
College-age populations (18-24 years and 25-29 years), with projections: 1980 to 2005

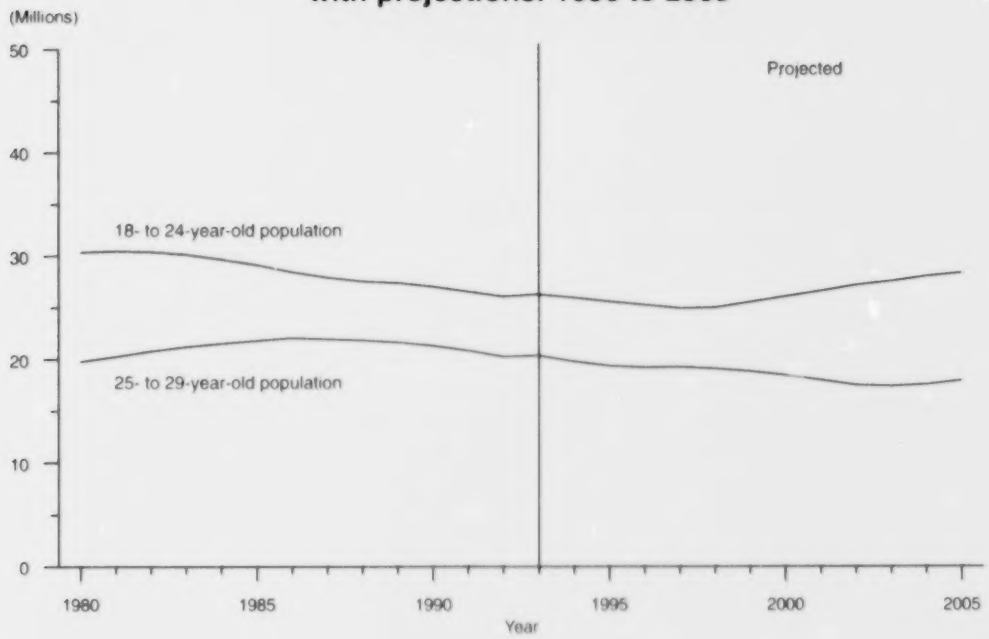

Figure 9
College-age populations (30-34 years and 35-44 years), with projections: 1980 to 2005

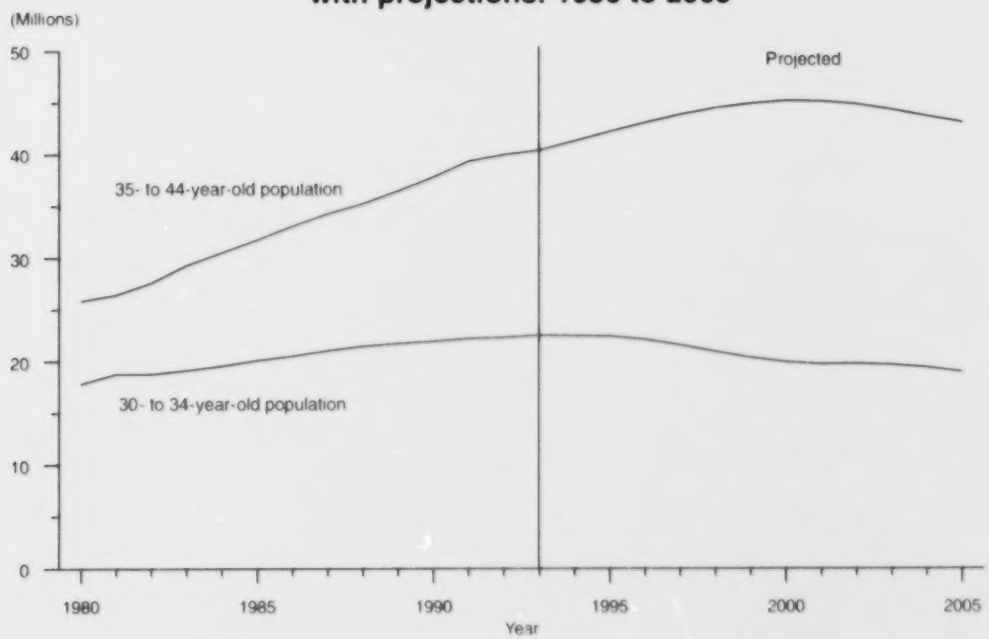

Figure 10
Enrollment in institutions of higher education, with alternative projections: Fall 1980 to fall 2005

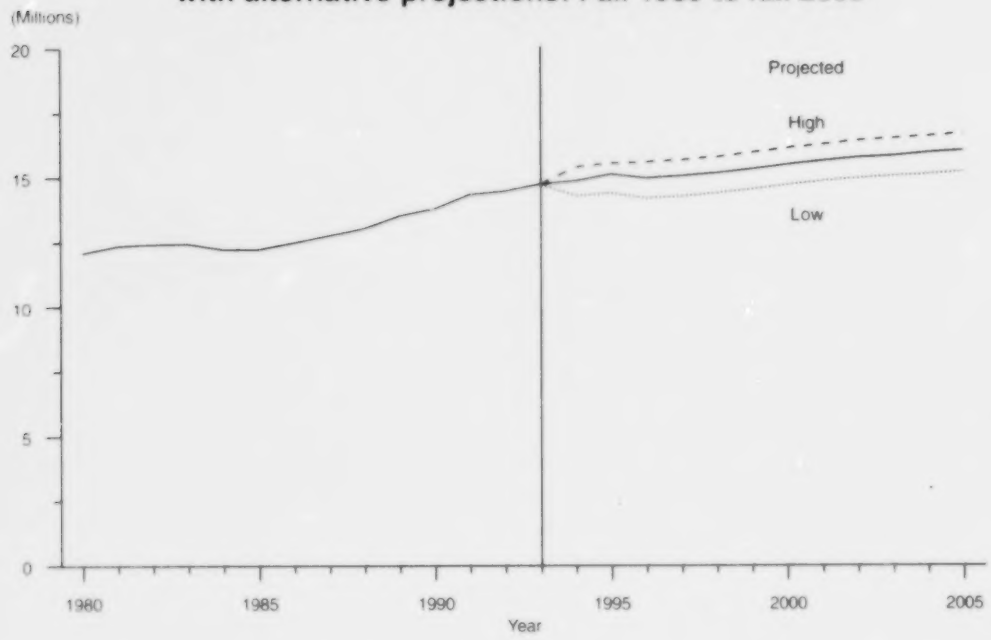

Figure 11
Average annual growth rates for total higher education enrollment

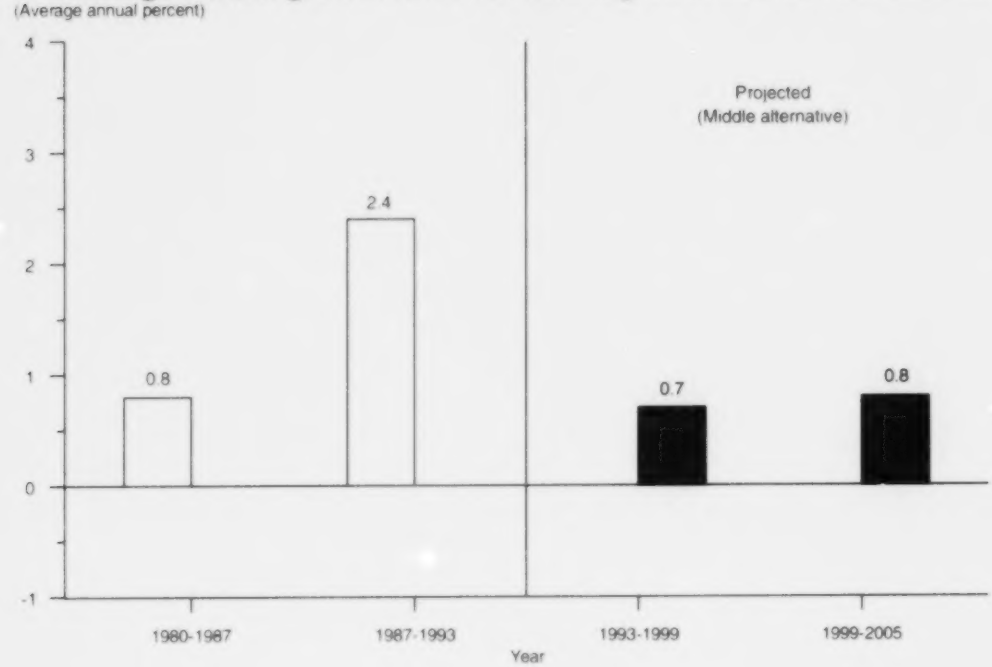

Figure 12
Enrollment in institutions of higher education, by sex, with middle alternative projections: Fall 1980 to fall 2005

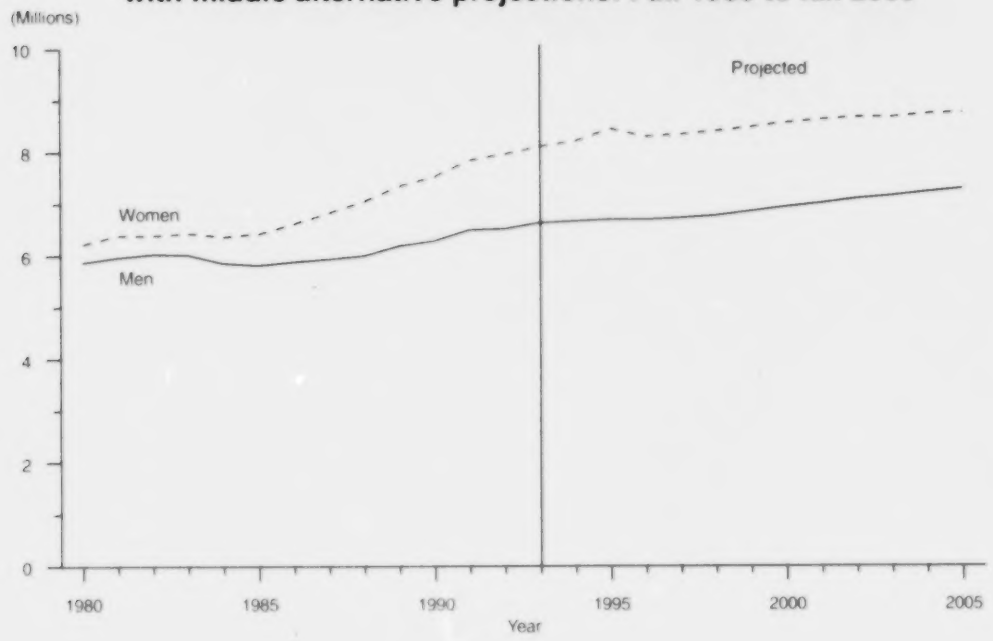

Figure 13
Average annual growth rates for total higher education enrollment, by sex
(Average annual percent)

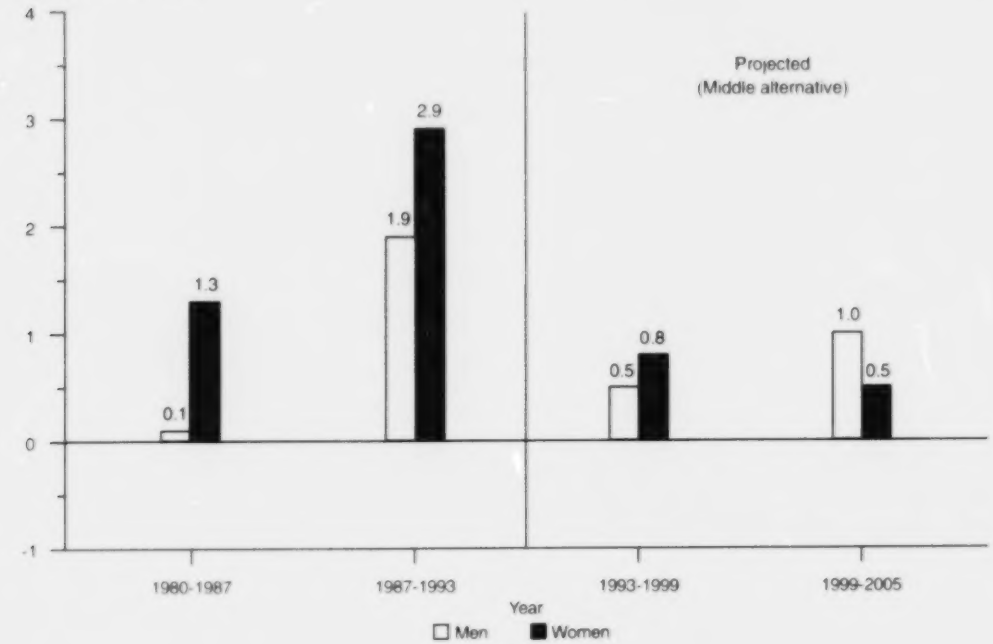

Figure 14
Enrollment in institutions of higher education, by attendance status, with middle alternative projections: Fall 1980 to fall 2005

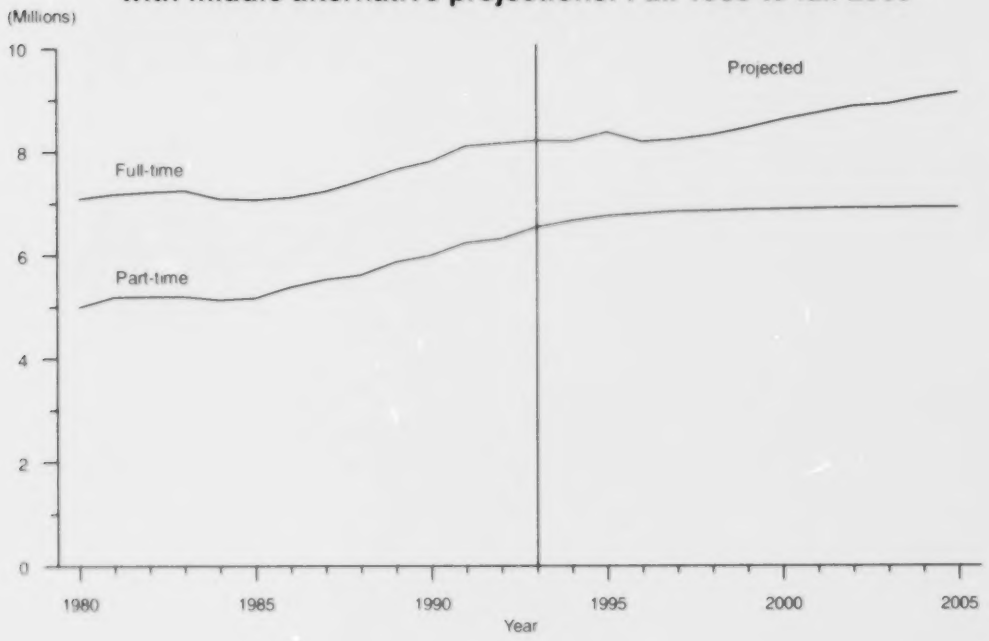

Figure 15
Average annual growth rates for total higher education enrollment, by attendance status

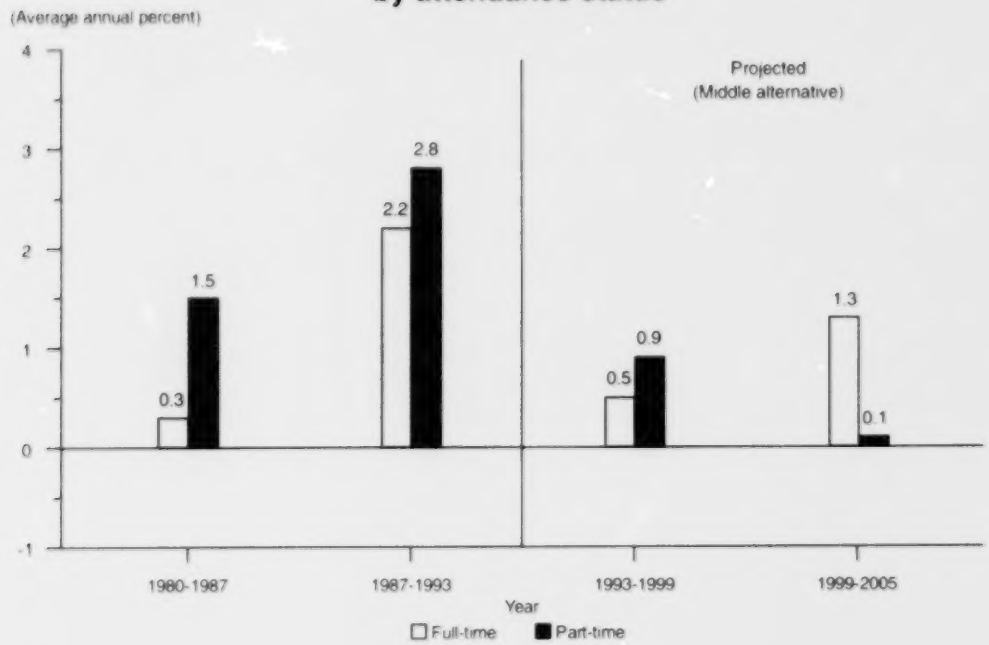

Figure 16
Enrollment in institutions of higher education, by control of institution, with alternative projections: Fall 1980 to fall 2005

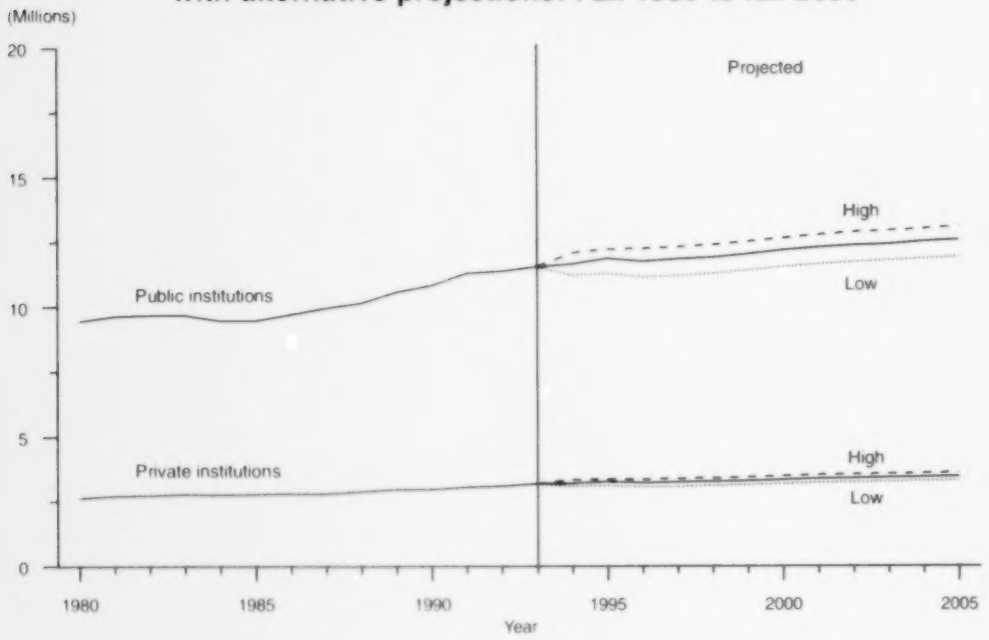

Figure 17
Average annual growth rates for total higher education enrollment, by control of institution

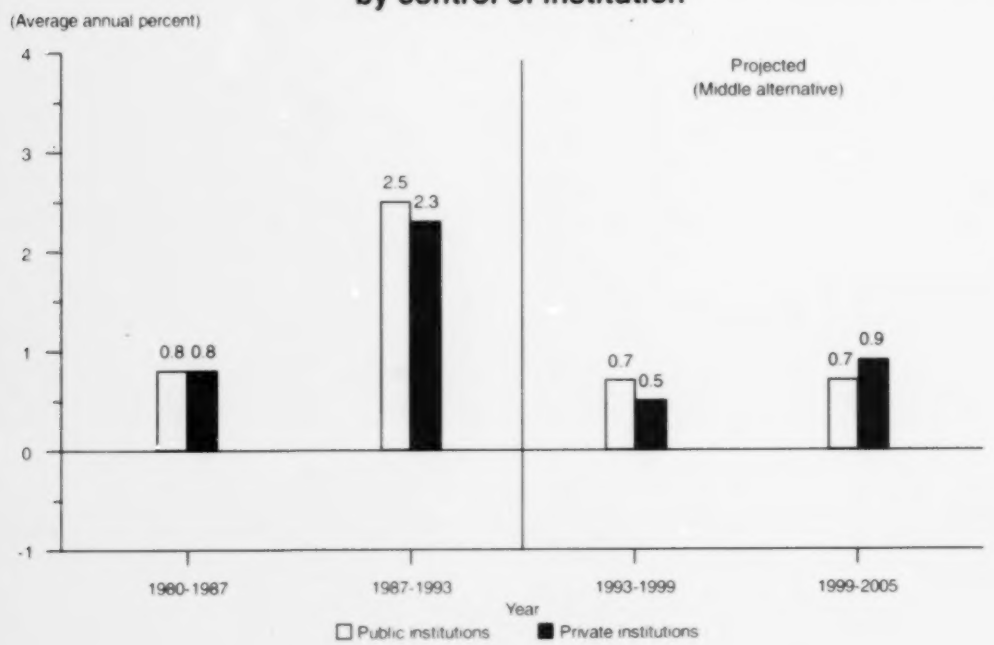

Figure 18
Enrollment in institutions of higher education, by type of institution, with alternative projections: Fall 1980 to fall 2005

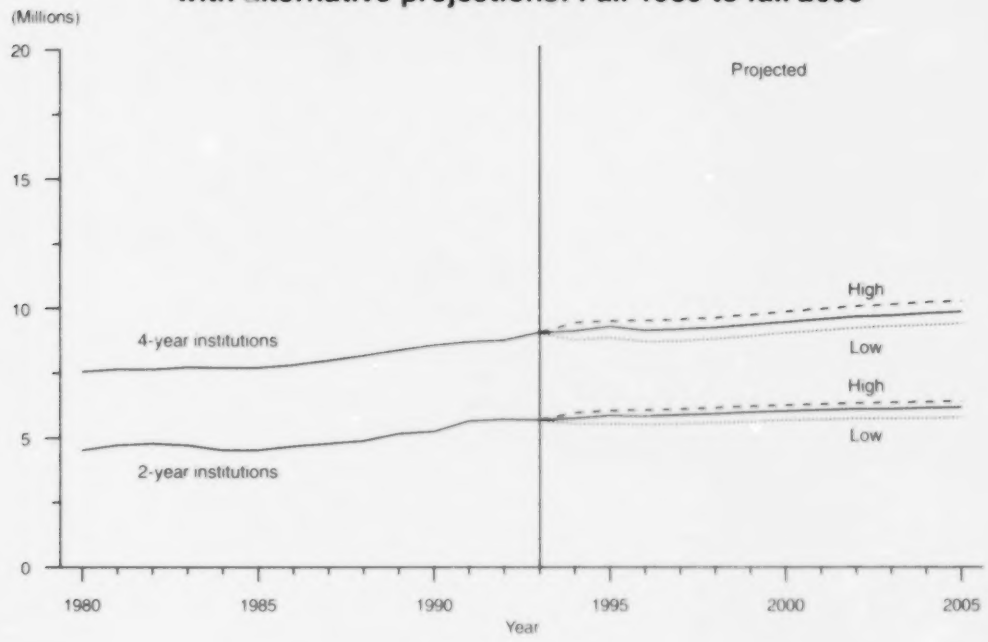

Figure 19
Average annual growth rates for total higher education enrollment, by type of institution

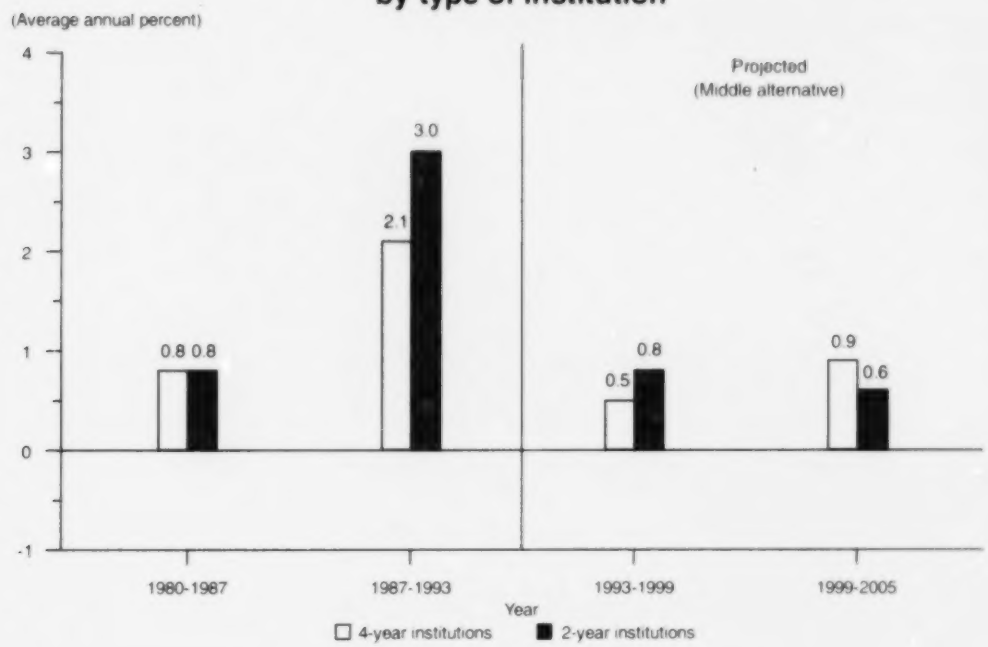

Figure 20
Undergraduate enrollment in institutions of higher education, with alternative projections: Fall 1980 to fall 2005

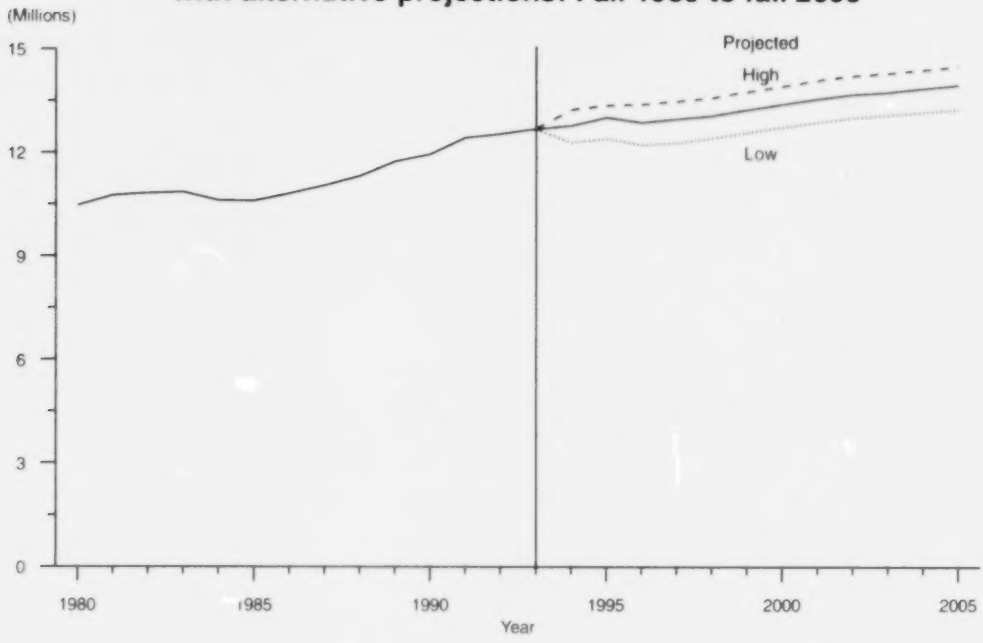

Figure 21
Average annual growth rates for undergraduate enrollment

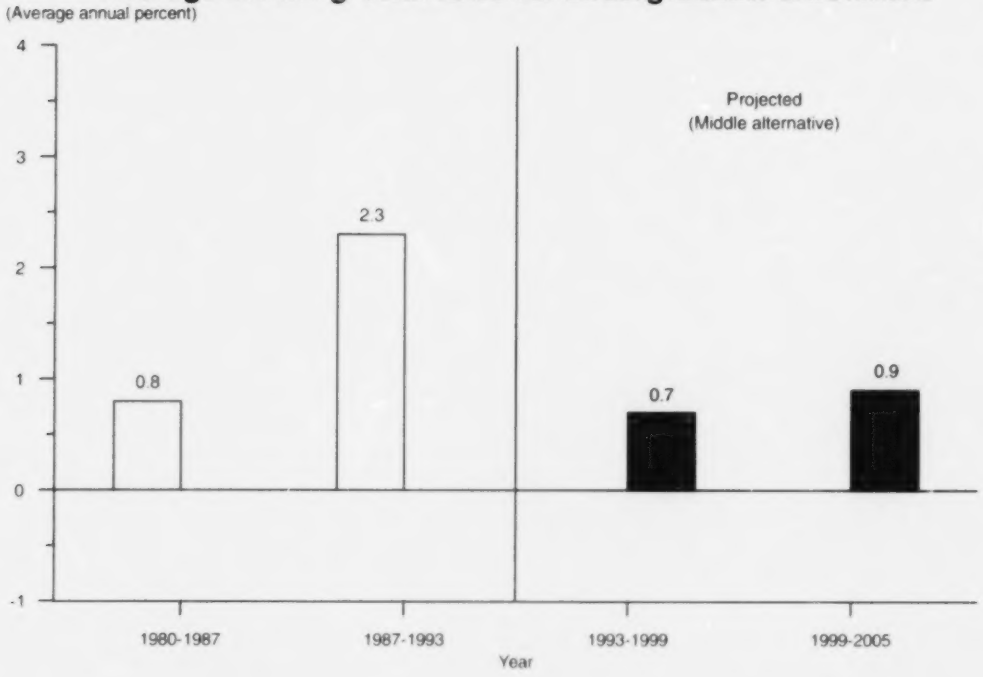

Figure 22
Postbaccalaureate enrollment in institutions of higher education, with alternative projections: Fall 1980 to fall 2005

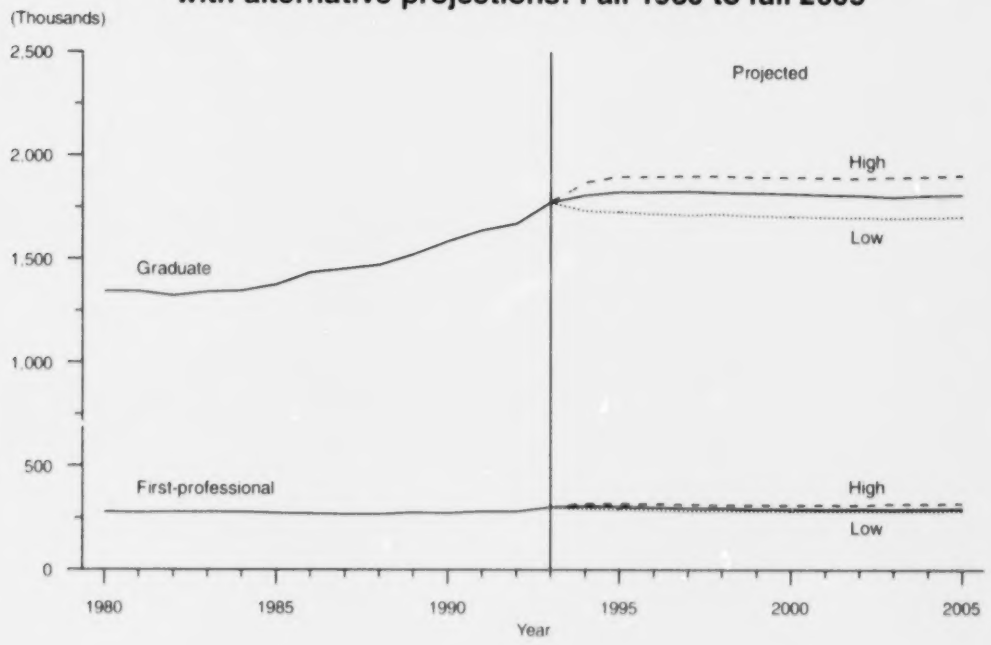

Figure 23
Average annual rates of change for postbaccalaureate enrollment

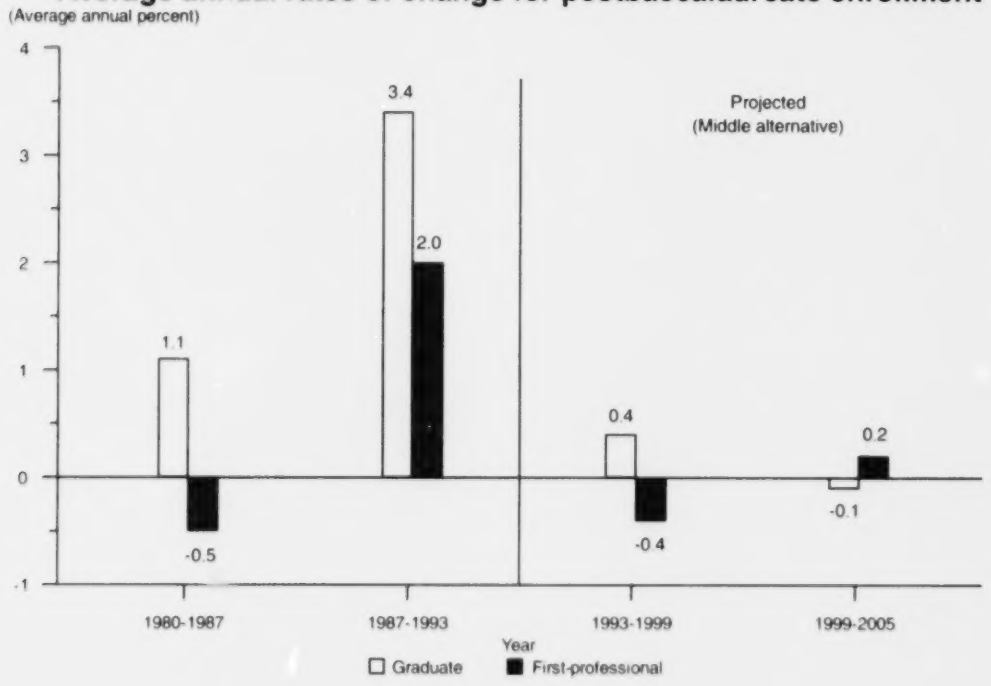

Figure 24
Full-time-equivalent enrollment in institutions of higher education, with alternative projections: Fall 1980 to fall 2005

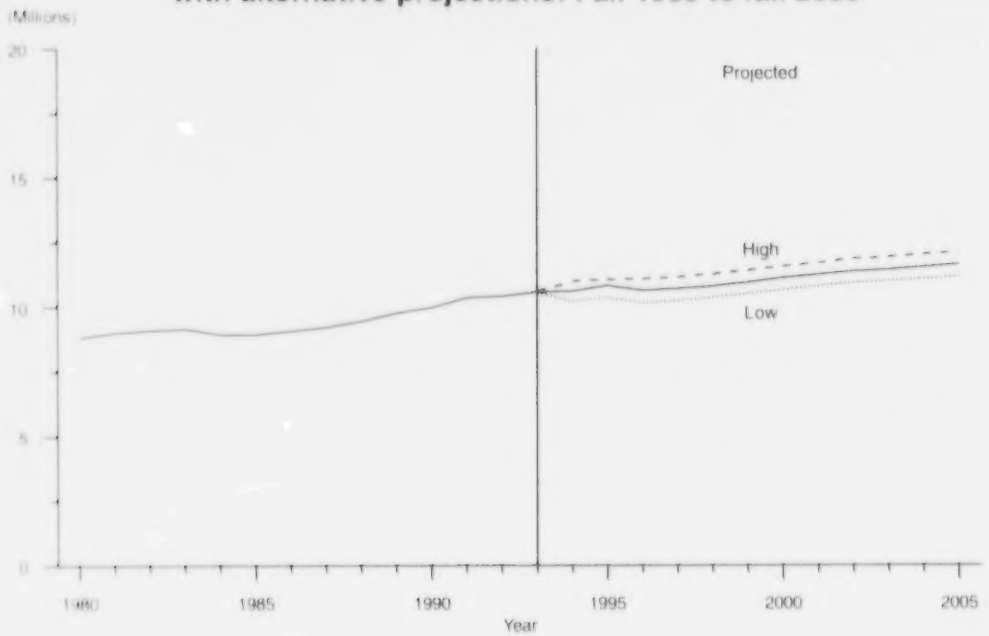

Figure 25
Average annual growth rates for full-time-equivalent enrollment

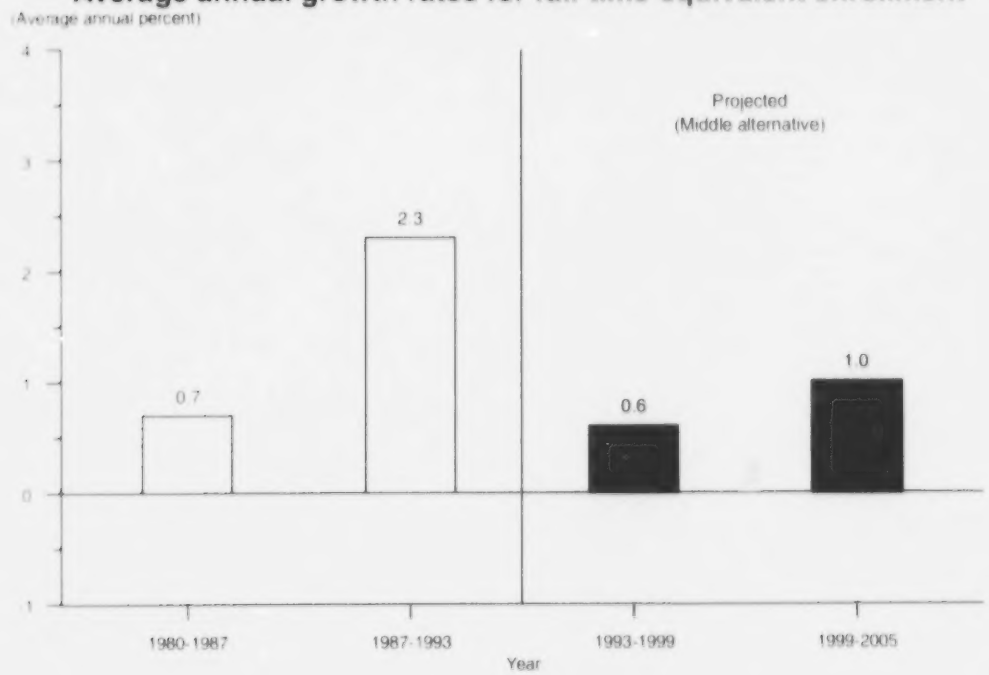

Figure 26
Enrollment in institutions of higher education, by age group, with middle alternative projections: Fall 1985, 1993, and 2005

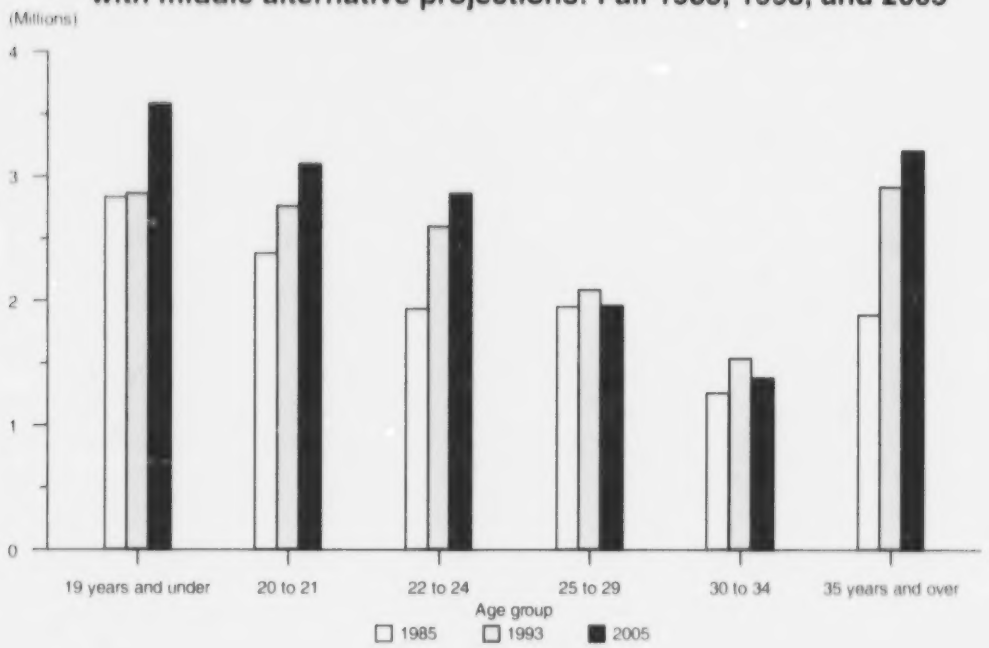

Figure 27
Enrollment of men in institutions of higher education, by age group, with middle alternative projections: Fall 1985, 1993, and 2005

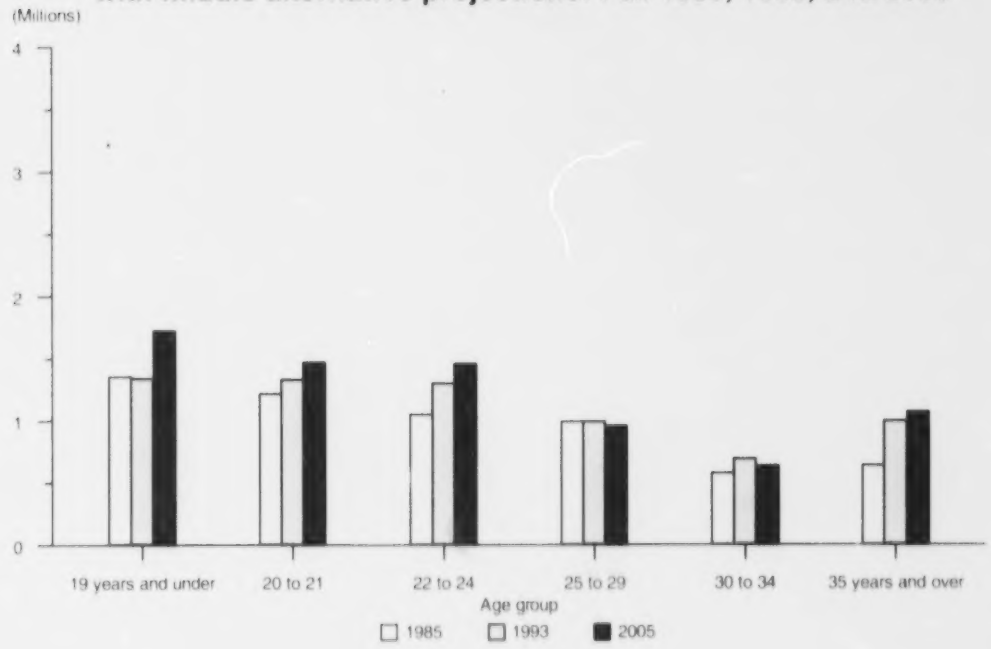

Figure 28
Enrollment of women in institutions of higher education, by age group, with middle alternative projections: Fall 1985, 1993, and 2005

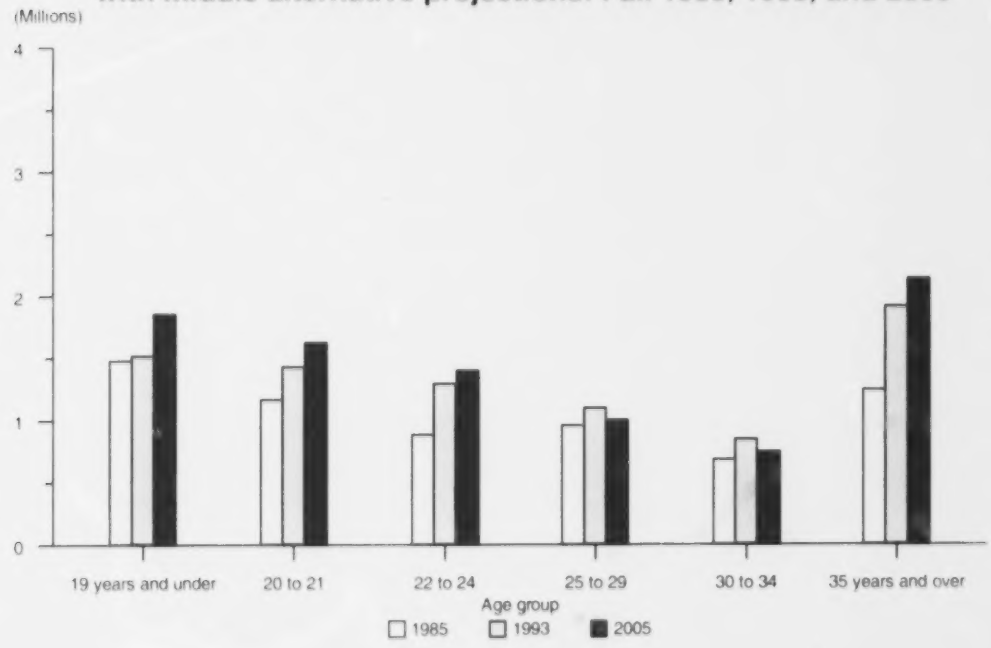

Table 3.—Total enrollment in all institutions of higher education, by sex, attendance status, and control of institution, with alternative projections: 50 States and D.C., fall 1980 to fall 2005

(In thousands)

Year	Total	Sex		Attendance status		Control	
		Men	Women	Full-time	Part-time	Public	Private
1980	12,097	5,874	6,223	7,098	4,999	9,457	2,640
1981	12,372	5,975	6,397	7,181	5,190	9,647	2,725
1982	12,426	6,031	6,394	7,221	5,205	9,696	2,730
1983	12,465	6,024	6,441	7,261	5,204	9,683	2,782
1984	12,242	5,864	6,378	7,098	5,144	9,477	2,765
1985	12,247	5,818	6,429	7,075	5,172	9,479	2,768
1986	12,504	5,885	6,619	7,120	5,384	9,714	2,790
1987	12,767	5,932	6,835	7,231	5,536	9,973	2,793
1988	13,055	6,002	7,053	7,437	5,619	10,161	2,894
1989	13,539	6,190	7,349	7,661	5,878	10,578	2,961
1990	13,820	6,284	7,535	7,821	5,998	10,845	2,975
1991	14,359	6,502	7,857	8,115	6,244	11,310	3,049
1992	14,492	6,526	7,966	8,167	6,325	11,389	3,103
1993*	14,762	6,643	8,119	8,220	6,542	11,569	3,193
Middle alternative projections							
1994	14,889	6,669	8,220	8,212	6,677	11,675	3,214
1995	15,159	6,705	8,454	8,388	6,771	11,883	3,276
1996	15,006	6,699	8,307	8,198	6,808	11,779	3,227
1997	15,090	6,737	8,353	8,240	6,850	11,850	3,240
1998	15,192	6,780	8,412	8,327	6,865	11,931	3,261
1999	15,352	6,859	8,493	8,467	6,885	12,055	3,297
2000	15,522	6,948	8,574	8,624	6,898	12,187	3,335
2001	15,665	7,028	8,637	8,755	6,910	12,296	3,369
2002	15,796	7,111	8,685	8,879	6,917	12,396	3,400
2003	15,848	7,165	8,683	8,930	6,918	12,435	3,413
2004	15,976	7,231	8,745	9,053	6,923	12,529	3,447
2005	16,077	7,300	8,777	9,149	6,928	12,607	3,470
Low alternative projections							
1994	14,329	6,416	7,913	7,950	6,379	11,232	3,097
1995	14,439	6,387	8,052	8,074	6,365	11,311	3,128
1996	14,246	6,381	7,865	7,898	6,348	11,172	3,074
1997	14,295	6,410	7,885	7,943	6,352	11,212	3,083
1998	14,427	6,483	7,944	8,069	6,358	11,312	3,115
1999	14,582	6,553	8,029	8,216	6,366	11,433	3,149
2000	14,747	6,646	8,101	8,374	6,373	11,557	3,190
2001	14,888	6,720	8,168	8,513	6,375	11,664	3,224
2002	15,010	6,802	8,208	8,637	6,373	11,754	3,256
2003	15,079	6,847	8,232	8,709	6,370	11,805	3,274
2004	15,163	6,897	8,266	8,798	6,365	11,868	3,295
2005	15,251	6,955	8,296	8,884	6,367	11,934	3,317
High alternative projections							
1994	15,431	6,853	8,578	8,505	6,926	12,101	3,330
1995	15,589	6,933	8,656	8,533	7,056	12,233	3,356
1996	15,627	6,956	8,671	8,542	7,085	12,265	3,362
1997	15,705	7,011	8,694	8,592	7,113	12,330	3,375
1998	15,815	7,068	8,747	8,685	7,130	12,417	3,398
1999	15,980	7,140	8,840	8,836	7,144	12,545	3,435
2000	16,150	7,232	8,918	8,992	7,158	12,675	3,475
2001	16,307	7,311	8,996	9,134	7,173	12,795	3,512
2002	16,444	7,394	9,050	9,262	7,182	12,898	3,546
2003	16,525	7,450	9,075	9,340	7,185	12,958	3,567
2004	16,630	7,516	9,114	9,439	7,191	13,035	3,595
2005	16,726	7,584	9,142	9,529	7,197	13,109	3,617

* Projected.

NOTE: Projections are based on data through 1992. Because of rounding, details may not add to totals.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fall Enrollment in Colleges and Universities surveys and Integrated Postsecondary Education Data System (IPEDS) surveys. (This table was prepared August 1994.)

Table 4.—Total enrollment in 4-year institutions of higher education, by sex, attendance status, and control of institution, with alternative projections: 50 States and D.C., fall 1980 to fall 2005

(In thousands)

Year	Total	Sex		Attendance status		Control	
		Men	Women	Full-time	Part-time	Public	Private
1980	7,571	3,827	3,743	5,344	2,226	5,129	2,442
1981	7,655	3,852	3,805	5,387	2,270	5,166	2,489
1982	7,654	3,861	3,793	5,381	2,273	5,176	2,478
1983	7,741	3,893	3,849	5,434	2,307	5,223	2,518
1984	7,711	3,847	3,864	5,395	2,317	5,198	2,513
1985	7,716	3,816	3,900	5,385	2,331	5,210	2,506
1986	7,824	3,824	4,000	5,423	2,401	5,300	2,524
1987	7,990	3,859	4,131	5,522	2,468	5,432	2,558
1988	8,180	3,912	4,268	5,693	2,487	5,546	2,634
1989	8,388	3,973	4,414	5,805	2,582	5,694	2,693
1990	8,579	4,052	4,528	5,937	2,642	5,848	2,731
1991	8,707	4,100	4,607	6,041	2,666	5,905	2,802
1992	8,768	4,112	4,656	6,084	2,684	5,903	2,865
1993*	9,073	4,264	4,809	6,186	2,887	6,135	2,938
				Middle alternative projections			
1994	9,126	4,275	4,851	6,175	2,951	6,169	2,957
1995	9,303	4,293	5,010	6,308	2,995	6,289	3,014
1996	9,162	4,280	4,882	6,150	3,012	6,194	2,968
1997	9,201	4,295	4,906	6,170	3,031	6,222	2,979
1998	9,264	4,318	4,946	6,231	3,033	6,267	2,997
1999	9,369	4,368	5,001	6,332	3,037	6,340	3,029
2000	9,485	4,427	5,058	6,448	3,037	6,421	3,064
2001	9,587	4,483	5,104	6,549	3,038	6,492	3,095
2002	9,681	4,541	5,140	6,644	3,037	6,557	3,124
2003	9,724	4,580	5,144	6,689	3,035	6,588	3,136
2004	9,818	4,625	5,193	6,784	3,034	6,651	3,167
2005	9,887	4,670	5,217	6,854	3,033	6,699	3,188
				Low alternative projections			
1994	8,793	4,107	4,686	5,971	2,822	5,944	2,849
1995	8,884	4,085	4,799	6,065	2,819	6,007	2,877
1996	8,727	4,076	4,651	5,916	2,811	5,900	2,827
1997	8,753	4,091	4,662	5,940	2,813	5,919	2,834
1998	8,846	4,143	4,703	6,033	2,813	5,983	2,863
1999	8,947	4,187	4,760	6,136	2,811	6,055	2,892
2000	9,063	4,251	4,812	6,254	2,809	6,135	2,928
2001	9,169	4,307	4,862	6,363	2,806	6,209	2,960
2002	9,260	4,367	4,893	6,459	2,801	6,271	2,989
2003	9,317	4,402	4,915	6,519	2,798	6,310	3,007
2004	9,381	4,438	4,943	6,589	2,792	6,355	3,026
2005	9,444	4,478	4,966	6,652	2,792	6,398	3,046
				High alternative projections			
1994	9,459	4,401	5,058	6,404	3,055	6,394	3,065
1995	9,530	4,445	5,085	6,419	3,111	6,442	3,088
1996	9,542	4,452	5,090	6,417	3,125	6,449	3,093
1997	9,579	4,477	5,102	6,442	3,137	6,476	3,103
1998	9,649	4,513	5,136	6,507	3,142	6,525	3,124
1999	9,758	4,559	5,199	6,616	3,142	6,601	3,157
2000	9,875	4,622	5,253	6,732	3,143	6,682	3,193
2001	9,988	4,679	5,309	6,843	3,145	6,760	3,228
2002	10,088	4,738	5,350	6,943	3,145	6,829	3,259
2003	10,152	4,780	5,372	7,008	3,144	6,873	3,279
2004	10,230	4,827	5,403	7,087	3,143	6,926	3,304
2005	10,299	4,873	5,426	7,155	3,144	6,974	3,325

*Projected.

NOTE: Projections are based on data through 1992. Because of rounding, details may not add to totals.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fall Enrollment in Colleges and Universities surveys and Integrated Postsecondary Education Data System (IPEDS) surveys. (This table was prepared August 1994.)

Table 5.—Total enrollment in 2-year institutions of higher education, by sex, attendance status, and control of institution, with alternative projections: 50 States and D.C., fall 1980 to fall 2005

(In thousands)

Year	Total	Sex		Attendance status		Control	
		Men	Women	Full-time	Part-time	Public	Private
1980	4,526	2,047	2,479	1,754	2,772	4,329	198
1981	4,716	2,124	2,591	1,796	2,919	4,481	236
1982	4,772	2,170	2,602	1,840	2,932	4,520	252
1983	4,723	2,131	2,592	1,827	2,897	4,459	264
1984	4,531	2,017	2,514	1,704	2,827	4,279	252
1985	4,531	2,002	2,529	1,691	2,840	4,270	261
1986	4,680	2,061	2,619	1,696	2,983	4,414	266
1987	4,776	2,073	2,703	1,709	3,068	4,541	235
1988	4,875	2,090	2,785	1,744	3,132	4,615	260
1989	5,151	2,217	2,934	1,856	3,295	4,884	267
1990	5,240	2,233	3,007	1,884	3,356	4,996	244
1991	5,652	2,402	3,250	2,075	3,577	5,405	247
1992	5,724	2,414	3,310	2,083	3,641	5,486	238
1993 *	5,689	2,379	3,310	2,034	3,655	5,434	255
				Middle alternative projections			
1994	5,763	2,394	3,369	2,037	3,726	5,506	257
1995	5,856	2,412	3,444	2,080	3,776	5,594	262
1996	5,844	2,419	3,425	2,048	3,796	5,585	259
1997	5,889	2,442	3,447	2,070	3,819	5,628	261
1998	5,928	2,462	3,466	2,096	3,832	5,664	264
1999	5,983	2,491	3,492	2,135	3,848	5,715	268
2000	6,037	2,521	3,516	2,176	3,861	5,766	271
2001	6,078	2,545	3,533	2,206	3,872	5,804	274
2002	6,115	2,570	3,545	2,235	3,880	5,839	276
2003	6,124	2,585	3,539	2,241	3,883	5,847	277
2004	6,158	2,606	3,552	2,269	3,889	5,878	280
2005	6,190	2,630	3,560	2,295	3,895	5,908	282
				Low alternative projections			
1994	5,536	2,309	3,227	1,979	3,557	5,288	248
1995	5,555	2,302	3,253	2,009	3,546	5,304	251
1996	5,519	2,305	3,214	1,982	3,537	5,272	247
1997	5,542	2,319	3,223	2,003	3,539	5,293	249
1998	5,581	2,340	3,241	2,036	3,545	5,329	252
1999	5,635	2,366	3,269	2,080	3,555	5,378	257
2000	5,684	2,395	3,289	2,120	3,564	5,422	262
2001	5,719	2,413	3,306	2,150	3,569	5,455	264
2002	5,750	2,435	3,315	2,178	3,572	5,483	267
2003	5,762	2,445	3,317	2,190	3,572	5,495	267
2004	5,782	2,459	3,323	2,209	3,573	5,513	269
2005	5,807	2,477	3,330	2,232	3,575	5,536	271
				High alternative projections			
1994	5,972	2,452	3,520	2,101	3,871	5,707	265
1995	6,059	2,488	3,571	2,114	3,945	5,791	268
1996	6,085	2,504	3,581	2,125	3,960	5,816	269
1997	6,126	2,534	3,592	2,150	3,976	5,854	272
1998	6,166	2,555	3,611	2,178	3,988	5,892	274
1999	6,222	2,581	3,641	2,220	4,002	5,944	278
2000	6,275	2,610	3,665	2,260	4,015	5,993	282
2001	6,319	2,632	3,687	2,291	4,028	6,035	284
2002	6,356	2,656	3,700	2,319	4,037	6,069	287
2003	6,373	2,670	3,703	2,332	4,041	6,085	288
2004	6,400	2,689	3,711	2,352	4,048	6,109	291
2005	6,427	2,711	3,716	2,374	4,053	6,135	292

* Projected.

NOTE: Projections are based on data through 1992. Because of rounding, details may not add to totals.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fall Enrollment in Colleges and Universities surveys and Integrated Postsecondary Education Data System (IPEDS) surveys. (This table was prepared August 1994.)

Table 6.—Enrollment in all institutions of higher education, by age, sex, and attendance status, with middle alternative projections: 50 States and D.C., fall 1985, 1990, 1993, 2000, and 2005

(In thousands)

Age	1985 (Estimated)			1990 (Estimated)			1993 (Projected)			2000 (Projected)			2005 (Projected)		
	Total	Full-time	Part-time	Total	Full-time	Part-time	Total	Full-time	Part-time	Total	Full-time	Part-time	Total	Full-time	Part-time
Total	**12,247**	**7,075**	**5,172**	**13,820**	**7,821**	**5,998**	**14,762**	**8,220**	**6,542**	**15,522**	**8,624**	**6,898**	**16,077**	**9,149**	**6,928**
14 to 17 years	235	203	32	167	141	26	177	161	16	246	227	19	283	263	20
18 to 19 years	2,601	2,322	278	2,800	2,479	321	2,684	2,356	328	3,123	2,726	396	3,296	2,882	414
20 to 21 years	2,383	1,975	408	2,619	2,121	498	2,762	2,245	517	2,849	2,304	545	3,095	2,501	593
22 to 24 years	1,933	1,227	705	2,166	1,387	779	2,596	1,659	937	2,526	1,597	929	2,860	1,812	1,049
25 to 29 years	1,953	695	1,258	2,063	802	1,261	2,091	764	1,327	1,979	688	1,291	1,960	658	1,302
30 to 34 years	1,261	310	951	1,360	403	957	1,538	417	1,121	1,445	373	1,072	1,378	356	1,022
35 years and over	1,885	345	1,540	2,644	487	2,157	2,915	618	2,296	3,356	708	2,648	3,206	676	2,529
Men	5,818	3,608	2,211	6,284	3,808	2,477	6,643	3,979	2,664	6,948	4,150	2,798	7,300	4,454	2,846
14 to 17 years	121	102	19	82	70	12	84	74	11	126	114	12	151	139	13
18 to 19 years	1,230	1,108	122	1,351	1,198	153	1,256	1,111	145	1,467	1,287	180	1,572	1,384	188
20 to 21 years	1,216	1,027	189	1,304	1,055	250	1,329	1,109	220	1,347	1,118	229	1,469	1,217	252
22 to 24 years	1,048	730	318	1,107	757	350	1,300	888	412	1,283	883	400	1,456	1,006	450
25 to 29 years	991	395	596	976	413	563	988	395	593	945	342	603	954	321	634
30 to 34 years	574	149	424	564	162	402	690	181	509	664	159	505	631	151	480
35 years and over	639	97	542	901	154	747	997	221	777	1,118	247	870	1,065	236	829
Women	6,429	3,468	2,961	7,535	4,013	3,522	8,119	4,241	3,878	8,574	4,474	4,100	8,777	4,695	4,082
14 to 17 years	113	101	12	85	71	13	93	87	6	119	113	7	132	125	7
18 to 19 years	1,370	1,214	156	1,450	1,281	168	1,428	1,245	183	1,656	1,439	217	1,724	1,498	226
20 to 21 years	1,166	948	218	1,315	1,067	248	1,433	1,136	297	1,502	1,186	316	1,626	1,285	341
22 to 24 years	885	497	388	1,059	630	429	1,296	771	525	1,243	713	530	1,404	805	598
25 to 29 years	962	299	662	1,087	389	699	1,103	369	734	1,034	347	687	1,006	337	669
30 to 34 years	687	161	527	796	242	555	848	236	612	781	214	567	747	205	542
35 years and over	1,246	248	998	1,743	333	1,410	1,917	397	1,520	2,239	461	1,778	2,141	441	1,700

NOTE: Because of rounding, details may not add to totals.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fall Enrollment in Colleges and Universities surveys and Integrated Postsecondary Education Data System (IPEDS) surveys; and U.S. Department of Commerce, Bureau of the Census, unpublished tabulations. (This table was prepared August 1994.)

Table 7.—Enrollment in all institutions of higher education, by age, sex, and attendance status, with low alternative projections: 50 States and D.C., fall 1985, 1990, 1993, 2000, and 2005

(In thousands)

Age	1985 (Estimated)			1990 (Estimated)			1993 (Projected)			2000 (Projected)			2005 (Projected)		
	Total	Full-time	Part-time	Total	Full-time	Part-time	Total	Full-time	Part-time	Total	Full-time	Part-time	Total	Full-time	Part-time
Total	**12,247**	**7,075**	**5,172**	**13,820**	**7,821**	**5,998**	**14,762**	**8,220**	**6,542**	**14,747**	**8,374**	**6,373**	**15,251**	**8,884**	**6,366**
14 to 17 years	235	203	32	167	141	26	177	161	16	233	214	19	262	242	20
18 to 19 years	2,600	2,322	278	2,800	2,479	321	2,684	2,356	328	3,042	2,668	374	3,203	2,814	389
20 to 21 years	2,383	1,975	408	2,619	2,121	498	2,762	2,245	517	2,753	2,266	487	2,983	2,457	526
22 to 24 years	1,933	1,227	705	2,166	1,387	779	2,596	1,659	937	2,326	1,487	839	2,649	1,703	946
25 to 29 years	1,953	695	1,258	2,063	802	1,261	2,091	764	1,327	1,882	662	1,221	1,849	643	1,206
30 to 34 years	1,261	310	951	1,360	403	957	1,538	417	1,121	1,352	367	985	1,290	350	940
35 years and over	1,885	345	1,540	2,644	487	2,157	2,915	618	2,296	3,157	708	2,448	3,015	676	2,338
Men	5,818	3,608	2,211	6,284	3,808	2,477	6,643	3,979	2,664	6,646	4,033	2,613	6,955	4,332	2,623
14 to 17 years	121	102	19	82	70	12	84	74	11	126	114	12	151	139	13
18 to 19 years	1,230	1,108	122	1,351	1,198	153	1,256	1,111	145	1,447	1,280	167	1,537	1,364	173
20 to 21 years	1,216	1,027	189	1,304	1,055	250	1,329	1,109	220	1,290	1,089	201	1,399	1,182	217
22 to 24 years	1,048	730	318	1,107	757	350	1,300	888	412	1,177	812	365	1,352	941	411
25 to 29 years	991	395	596	976	413	563	988	395	593	881	330	551	875	321	554
30 to 34 years	574	149	424	564	162	402	690	181	509	605	159	446	576	151	424
35 years and over	639	97	542	901	154	747	997	221	777	1,118	247	870	1,065	236	829
Women	6,429	3,468	2,961	7,535	4,013	3,522	8,119	4,241	3,878	8,101	4,341	3,760	8,296	4,552	3,743
14 to 17 years	113	101	12	85	71	13	93	87	6	107	100	7	110	104	7
18 to 19 years	1,370	1,214	156	1,450	1,281	168	1,428	1,245	183	1,595	1,388	207	1,666	1,449	216
20 to 21 years	1,166	948	218	1,315	1,067	248	1,433	1,136	297	1,464	1,177	286	1,584	1,275	309
22 to 24 years	885	497	388	1,059	630	429	1,296	771	525	1,149	675	474	1,297	762	535
25 to 29 years	962	299	662	1,087	389	699	1,103	369	734	1,001	331	670	974	322	652
30 to 34 years	687	161	527	796	242	555	848	236	612	747	208	539	714	199	515
35 years and over	1,246	248	998	1,743	333	1,410	1,917	397	1,520	2,039	461	1,578	1,949	441	1,509

NOTE: Because of rounding, details may not add to totals.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fall Enrollment in Colleges and Universities surveys and Integrated Postsecondary Education Data System (IPEDS) surveys; and U.S. Department of Commerce, Bureau of the Census, unpublished tabulations. (This table was prepared August 1994.)

Table 8.—Enrollment in all institutions of higher education, by age, sex, and attendance status, with high alternative projections: 50 States and D.C., fall 1985, 1990, 1993, 2000, and 2005

(In thousands)

Age	1985 (Estimated)			1990 (Estimated)			1993 (Projected)			2000 (Projected)			2004 (Projected)		
	Total	Full-time	Part-time	Total	Full-time	Part-time	Total	Full-time	Part-time	Total	Full-time	Part-time	Total	Full-time	Part-time
Total	**12,247**	**7,075**	**5,172**	**13,820**	**7,821**	**5,998**	**14,762**	**8,220**	**6,542**	**16,150**	**8,992**	**7,158**	**16,726**	**9,529**	**7,197**
14 to 17 years	235	203	32	167	141	26	177	161	16	246	227	19	283	263	20
18 to 19 years	2,600	2,322	278	2,800	2,479	321	2,684	2,356	328	3,238	2,823	415	3,382	2,948	434
20 to 21 years	2,383	1,975	408	2,619	2,121	498	2,762	2,245	517	2,978	2,371	608	3,232	2,576	656
22 to 24 years	1,933	1,227	705	2,166	1,387	779	2,596	1,659	937	2,678	1,687	991	3,020	1,902	1,118
25 to 29 years	1,953	695	1,258	2,063	802	1,261	2,091	764	1,327	2,099	782	1,317	2,112	781	1,331
30 to 34 years	1,261	310	951	1,360	403	957	1,538	417	1,121	1,502	394	1,108	1,439	382	1,056
35 years and over	1,885	345	1,540	2,644	487	2,157	2,915	618	2,296	3,411	708	2,703	3,258	676	2,581
Men	5,818	3,608	2,211	6,284	3,808	2,477	6,643	3,979	2,664	7,232	4,351	2,881	7,584	4,655	2,929
14 to 17 years	121	102	19	82	70	12	84	74	11	126	114	12	151	139	13
18 to 19 years	1,230	1,108	122	1,351	1,198	153	1,256	1,111	145	1,519	1,329	190	1,587	1,388	199
20 to 21 years	1,216	1,027	189	1,304	1,055	250	1,329	1,109	220	1,375	1,139	236	1,500	1,245	255
22 to 24 years	1,048	730	318	1,107	757	350	1,300	888	412	1,363	938	425	1,535	1,056	478
25 to 29 years	991	395	596	976	413	563	988	395	593	1,022	414	608	1,065	423	642
30 to 34 years	574	149	424	564	162	402	690	181	509	710	170	540	682	168	513
35 years and over	639	97	542	901	154	747	997	221	777	1,118	247	870	1,065	236	829
Women	6,429	3,468	2,961	7,535	4,013	3,522	8,119	4,241	3,878	8,918	4,641	4,277	9,142	4,874	4,268
14 to 17 years	113	101	12	85	71	13	93	87	6	119	113	7	132	125	7
18 to 19 years	1,370	1,214	156	1,450	1,281	168	1,428	1,245	183	1,719	1,494	225	1,795	1,560	235
20 to 21 years	1,166	948	218	1,315	1,067	248	1,433	1,136	297	1,603	1,232	372	1,732	1,331	401
22 to 24 years	885	497	388	1,059	630	429	1,296	771	525	1,316	749	567	1,486	846	640
25 to 29 years	962	299	662	1,087	389	699	1,103	369	734	1,077	368	709	1,047	358	689
30 to 34 years	687	161	527	796	242	555	848	236	612	792	224	568	757	214	543
35 years and over	1,246	248	998	1,743	333	1,410	1,917	397	1,520	2,293	461	1,832	2,193	441	1,752

NOTE: Because of rounding, details may not add to totals.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fall Enrollment in Colleges and Universities surveys and Integrated Postsecondary Education Data System (IPEDS) surveys; and U.S. Department of Commerce, Bureau of the Census, unpublished tabulations. (This table was prepared August 1994.)

Table 9.—Total enrollment in all institutions of higher education, by sex and attendance status, with alternative projections: 50 States and D.C., fall 1980 to fall 2005

(In thousands)

Year	Total	Men		Women	
		Full-time	Part-time	Full-time	Part-time
1980	12,097	3,689	2,185	3,409	2,814
1981	12,372	3,714	2,262	3,469	2,927
1982	12,426	3,753	2,278	3,468	2,927
1983	12,465	3,760	2,264	3,501	2,940
1984	12,242	3,648	2,216	3,451	2,927
1985	12,247	3,608	2,211	3,468	2,961
1986	12,504	3,599	2,285	3,521	3,098
1987	12,767	3,611	2,321	3,620	3,214
1988	13,055	3,662	2,340	3,775	3,278
1989	13,539	3,740	2,450	3,921	3,428
1990	13,820	3,808	2,477	4,013	3,522
1991	14,359	3,929	2,572	4,186	3,671
1992	14,492	3,929	2,597	4,238	3,728
1993 *	14,762	3,979	2,664	4,241	3,878
		Middle alternative projections			
1994	14,889	3,967	2,702	4,245	3,975
1995	15,159	3,975	2,730	4,413	4,041
1996	15,006	3,953	2,746	4,245	4,062
1997	15,090	3,969	2,768	4,271	4,082
1998	15,192	4,003	2,777	4,324	4,088
1999	15,352	4,070	2,789	4,397	4,096
2000	15,522	4,150	2,798	4,474	4,100
2001	15,665	4,222	2,806	4,533	4,104
2002	15,796	4,296	2,815	4,583	4,102
2003	15,848	4,343	2,822	4,587	4,096
2004	15,976	4,398	2,833	4,655	4,090
2005	16,077	4,454	2,846	4,695	4,082
		Low alternative projections			
1994	14,329	3,810	2,606	4,140	3,773
1995	14,439	3,785	2,602	4,289	3,763
1996	14,246	3,781	2,600	4,117	3,748
1997	14,295	3,806	2,604	4,137	3,748
1998	14,427	3,877	2,606	4,192	3,752
1999	14,582	3,946	2,607	4,270	3,759
2000	14,747	4,033	2,613	4,341	3,760
2001	14,888	4,108	2,612	4,405	3,763
2002	15,010	4,188	2,614	4,449	3,759
2003	15,079	4,231	2,616	4,478	3,754
2004	15,163	4,280	2,617	4,518	3,748
2005	15,251	4,332	2,623	4,552	3,744
		High alternative projections			
1994	15,431	4,095	2,758	4,410	4,168
1995	15,589	4,129	2,804	4,404	4,252
1996	15,627	4,126	2,830	4,416	4,255
1997	15,705	4,153	2,858	4,439	4,255
1998	15,815	4,201	2,867	4,484	4,263
1999	15,980	4,267	2,873	4,569	4,271
2000	16,150	4,351	2,881	4,641	4,277
2001	16,307	4,423	2,888	4,711	4,285
2002	16,444	4,496	2,898	4,766	4,284
2003	16,525	4,544	2,906	4,796	4,279
2004	16,630	4,599	2,917	4,840	4,274
2005	16,726	4,655	2,929	4,874	4,268

* Projected

NOTE: Projections are based on data through 1992. Because of rounding, details may not add to totals.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fall Enrollment in Colleges and Universities surveys and Integrated Postsecondary Education Data System (IPEDS) surveys. (This table was prepared August 1994.)

Table 10.—Total enrollment in public 4-year institutions of higher education, by sex and attendance status, with alternative projections: 50 States and D.C., fall 1980 to fall 2005

(In thousands)

Year	Total	Men		Women	
		Full-time	Part-time	Full-time	Part-time
1980	5,129	1,873	685	1,719	851
1981	5,166	1,877	692	1,741	858
1982	5,176	1,889	698	1,734	855
1983	5,223	1,910	698	1,755	860
1984	5,198	1,880	694	1,749	874
1985	5,210	1,864	693	1,760	893
1986	5,300	1,865	706	1,792	937
1987	5,432	1,882	723	1,854	973
1988	5,546	1,910	722	1,932	982
1989	5,694	1,938	743	1,997	1,017
1990	5,848	1,982	764	2,051	1,050
1991	5,905	2,006	765	2,083	1,050
1992	5,903	2,006	761	2,091	1,045
1993*	6,135	2,053	820	2,123	1,139
		Middle alternative projections			
1994	6,169	2,046	834	2,121	1,168
1995	6,289	2,048	843	2,211	1,187
1996	6,194	2,034	849	2,117	1,194
1997	6,222	2,039	855	2,128	1,200
1998	6,267	2,055	856	2,155	1,201
1999	6,340	2,088	858	2,192	1,202
2000	6,421	2,129	859	2,232	1,201
2001	6,492	2,167	860	2,265	1,200
2002	6,557	2,206	862	2,291	1,198
2003	6,588	2,232	863	2,297	1,196
2004	6,651	2,261	865	2,332	1,193
2005	6,699	2,289	868	2,352	1,190
		Low alternative projections			
1994	5,944	1,961	805	2,069	1,109
1995	6,007	1,946	806	2,149	1,106
1996	5,900	1,941	805	2,053	1,101
1997	5,919	1,951	806	2,061	1,101
1998	5,983	1,987	806	2,089	1,101
1999	6,055	2,020	805	2,129	1,101
2000	6,135	2,064	805	2,166	1,100
2001	6,209	2,105	804	2,201	1,099
2002	6,271	2,147	803	2,225	1,096
2003	6,310	2,171	803	2,242	1,094
2004	6,355	2,197	802	2,264	1,092
2005	6,398	2,223	804	2,281	1,090
		High alternative projections			
1994	6,394	2,113	850	2,208	1,223
1995	6,442	2,129	864	2,202	1,247
1996	6,449	2,125	872	2,205	1,247
1997	6,476	2,134	881	2,214	1,247
1998	6,525	2,158	882	2,236	1,249
1999	6,601	2,190	883	2,279	1,249
2000	6,682	2,233	884	2,316	1,249
2001	6,760	2,272	884	2,355	1,249
2002	6,829	2,311	886	2,385	1,247
2003	6,873	2,338	888	2,402	1,245
2004	6,926	2,368	890	2,425	1,243
2005	6,974	2,397	893	2,443	1,241

*Projected.

NOTE: Projections are based on data through 1992. Because of rounding, details may not add to totals.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fall Enrollment in Colleges and Universities surveys and Integrated Postsecondary Education Data System (IPEDS) surveys. (This table was prepared August 1994.)

Table 11.—Total enrollment in public 2-year institutions of higher education, by sex and attendance status, with alternative projections: 50 States and D.C., fall 1980 to fall 2005

(In thousands)

Year	Total	Men		Women	
		Full-time	Part-time	Full-time	Part-time
1980	4,329	812	1,152	784	1,581
1981	4,481	827	1,192	803	1,658
1982	4,520	851	1,195	810	1,664
1983	4,459	827	1,175	807	1,650
1984	4,279	762	1,138	756	1,623
1985	4,270	743	1,138	754	1,635
1986	4,414	742	1,193	764	1,715
1987	4,541	744	1,225	787	1,785
1988	4,615	746	1,231	822	1,817
1989	4,884	793	1,302	881	1,907
1990	4,996	811	1,318	906	1,962
1991	5,405	882	1,414	1,004	2,105
1992	5,486	879	1,431	1,039	2,137
1993*	5,434	858	1,411	996	2,169
		Middle alternative projections			
1994	5,506	856	1,427	1,001	2,222
1995	5,594	861	1,440	1,035	2,258
1996	5,585	860	1,448	1,007	2,270
1997	5,628	870	1,460	1,017	2,281
1998	5,664	881	1,467	1,030	2,286
1999	5,715	899	1,476	1,047	2,293
2000	5,766	920	1,484	1,064	2,298
2001	5,804	936	1,490	1,075	2,303
2002	5,839	953	1,497	1,085	2,304
2003	5,847	961	1,503	1,082	2,301
2004	5,878	973	1,510	1,096	2,299
2005	5,908	987	1,519	1,106	2,296
		Low alternative projections			
1994	5,288	828	1,375	976	2,109
1995	5,304	826	1,370	1,005	2,103
1996	5,272	830	1,369	977	2,096
1997	5,293	841	1,371	985	2,096
1998	5,329	858	1,373	998	2,100
1999	5,378	879	1,376	1,017	2,106
2000	5,422	900	1,381	1,032	2,109
2001	5,455	916	1,382	1,044	2,113
2002	5,483	933	1,385	1,052	2,113
2003	5,495	941	1,387	1,056	2,111
2004	5,513	951	1,390	1,063	2,109
2005	5,536	964	1,394	1,071	2,107
		High alternative projections			
1994	5,707	880	1,459	1,035	2,333
1995	5,791	890	1,483	1,037	2,381
1996	5,816	893	1,496	1,044	2,383
1997	5,854	906	1,511	1,054	2,383
1998	5,892	920	1,517	1,066	2,389
1999	5,944	938	1,523	1,086	2,397
2000	5,993	958	1,530	1,102	2,403
2001	6,035	973	1,536	1,116	2,410
2002	6,069	988	1,543	1,126	2,412
2003	6,085	996	1,549	1,130	2,410
2004	6,109	1,006	1,556	1,138	2,409
2005	6,135	1,019	1,564	1,146	2,406

*Projected

NOTE: Projections are based on data through 1992. Because of rounding, details may not add to totals.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fall Enrollment in Colleges and Universities surveys and Integrated Postsecondary Education Data System (IPEDS) surveys. (This table was prepared August 1994.)

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Table 12.—Total enrollment in private 4-year institutions of higher education, by sex and attendance status, with alternative projections: 50 States and D.C., fall 1980 to fall 2005

(In thousands)

Year	Total	Men		Women	
		Full-time	Part-time	Full-time	Part-time
1980	2,442	936	333	816	357
1981	2,489	939	344	830	376
1982	2,478	933	341	824	380
1983	2,518	935	350	834	399
1984	2,512	926	346	839	401
1985	2,506	917	342	844	403
1986	2,524	910	343	856	415
1987	2,558	908	346	878	426
1988	2,634	933	347	918	436
1989	2,693	933	360	938	463
1990	2,731	944	361	959	467
1991	2,802	962	367	990	483
1992	2,865	970	375	1,017	503
1993*	2,938	991	400	1,019	528
		Middle alternative projections			
1994	2,957	988	407	1,020	542
1995	3,014	989	413	1,060	552
1996	2,968	982	415	1,017	554
1997	2,979	982	419	1,021	557
1998	2,997	988	419	1,033	557
1999	3,029	1,002	420	1,050	557
2000	3,064	1,019	420	1,068	557
2001	3,095	1,035	421	1,082	557
2002	3,124	1,052	421	1,095	556
2003	3,136	1,064	421	1,096	555
2004	3,167	1,077	422	1,114	554
2005	3,188	1,090	423	1,123	552
		Low alternative projections			
1994	2,849	947	394	994	514
1995	2,877	939	394	1,031	513
1996	2,827	936	394	986	511
1997	2,834	939	395	989	511
1998	2,863	955	395	1,002	511
1999	2,892	968	394	1,019	511
2000	2,928	988	394	1,036	510
2001	2,960	1,005	393	1,052	510
2002	2,989	1,024	393	1,063	509
2003	3,007	1,035	393	1,071	508
2004	3,026	1,047	392	1,081	506
2005	3,046	1,059	392	1,089	506
		High alternative projections			
1994	3,065	1,023	415	1,060	567
1995	3,088	1,030	422	1,058	578
1996	3,093	1,028	427	1,059	579
1997	3,103	1,032	430	1,062	579
1998	3,124	1,041	432	1,072	579
1999	3,157	1,055	431	1,092	579
2000	3,193	1,074	431	1,109	579
2001	3,228	1,091	432	1,125	580
2002	3,259	1,108	433	1,139	579
2003	3,279	1,121	433	1,147	578
2004	3,304	1,135	434	1,159	576
2005	3,325	1,148	435	1,167	575

* Projected.

NOTE: Projections are based on data through 1992. Because of rounding, details may not add to totals.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fall Enrollment in Colleges and Universities surveys and Integrated Postsecondary Education Data System (IPEDS) surveys. (This table was prepared August 1994.)

Table 13.—Total enrollment in private 2-year institutions of higher education, by sex and attendance status, with alternative projections: 50 States and D.C., fall 1980 to fall 2005

(In thousands)

Year	Total	Men		Women	
		Full-time	Part-time	Full-time	Part-time
1980	198	68	15	90	24
1981	236	71	34	95	35
1982	252	80	45	99	28
1983	264	88	41	105	30
1984	252	79	37	106	29
1985	261	84	38	110	30
1986	266	83	43	108	32
1987	235	76	30	102	29
1988	260	73	40	103	44
1989	267	76	45	105	41
1990	244	71	34	96	43
1991	247	80	27	109	32
1992	238	74	30	91	43
1993*	255	77	33	103	42
Middle alternative projections					
1994	257	77	34	103	43
1995	262	77	34	107	44
1996	259	77	34	104	44
1997	261	78	34	105	44
1998	264	79	35	106	44
1999	268	81	35	108	44
2000	271	82	35	110	44
2001	274	84	35	111	44
2002	276	85	35	112	44
2003	277	86	35	112	44
2004	280	87	36	113	44
2005	282	88	36	114	44
Low alternative projections					
1994	248	74	32	101	41
1995	251	74	32	104	41
1996	247	74	32	101	40
1997	249	75	32	102	40
1998	252	77	32	103	40
1999	257	79	32	105	41
2000	262	81	33	107	41
2001	264	82	33	108	41
2002	267	84	33	109	41
2003	267	84	33	109	41
2004	269	85	33	110	41
2005	271	86	33	111	41
High alternative projections					
1994	265	79	34	107	45
1995	268	80	35	107	46
1996	269	80	35	108	46
1997	272	81	36	109	46
1998	274	82	36	110	46
1999	278	84	36	112	46
2000	282	86	36	114	46
2001	284	87	36	115	46
2002	287	89	36	116	46
2003	288	89	36	117	46
2004	291	90	37	118	46
2005	292	91	37	118	46

* Projected.

NOTE: Projections are based on data through 1992. Because of rounding, details may not add to totals.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fall Enrollment in Colleges and Universities surveys and Integrated Postsecondary Education Data System (IPEDS) surveys. (This table was prepared August 1994.)

Table 14.—Undergraduate enrollment in all institutions, by sex and attendance status, with alternative projections: 50 States and D.C., fall 1980 to fall 2005

(In thousands)

Year	Total	Men		Women	
		Full-time	Part-time	Full-time	Part-time
1980	10,475	3,227	1,773	3,135	2,340
1981	10,755	3,261	1,848	3,188	2,458
1982	10,825	3,299	1,871	3,184	2,470
1983	10,846	3,304	1,854	3,210	2,478
1984	10,618	3,195	1,812	3,153	2,459
1985	10,597	3,156	1,806	3,163	2,471
1986	10,798	3,146	1,871	3,206	2,575
1987	11,046	3,164	1,905	3,299	2,679
1988	11,317	3,206	1,931	3,436	2,743
1989	11,742	3,279	2,032	3,562	2,869
1990	11,959	3,337	2,043	3,640	2,940
1991	12,439	3,436	2,135	3,786	3,082
1992	12,540	3,426	2,158	3,822	3,134
1993*	12,686	3,468	2,180	3,806	3,232
		Middle alternative projections			
1994	12,775	3,453	2,209	3,801	3,312
1995	13,029	3,461	2,230	3,971	3,367
1996	12,880	3,448	2,241	3,808	3,383
1997	12,965	3,471	2,258	3,838	3,398
1998	13,072	3,510	2,267	3,892	3,403
1999	13,238	3,581	2,279	3,967	3,411
2000	13,411	3,663	2,288	4,044	3,416
2001	13,561	3,738	2,296	4,105	3,422
2002	13,693	3,812	2,305	4,154	3,422
2003	13,756	3,857	2,314	4,167	3,418
2004	13,871	3,910	2,325	4,221	3,415
2005	13,969	3,963	2,338	4,258	3,410
		Low alternative projections			
1994	12,301	3,322	2,128	3,707	3,144
1995	12,419	3,301	2,123	3,860	3,135
1996	12,238	3,303	2,119	3,694	3,122
1997	12,293	3,333	2,121	3,719	3,120
1998	12,424	3,402	2,123	3,775	3,124
1999	12,589	3,477	2,126	3,855	3,131
2000	12,755	3,563	2,132	3,926	3,134
2001	12,900	3,639	2,133	3,990	3,138
2002	13,024	3,717	2,136	4,034	3,137
2003	13,094	3,758	2,140	4,061	3,135
2004	13,177	3,805	2,143	4,098	3,131
2005	13,260	3,853	2,149	4,130	3,128
		High alternative projections			
1994	13,243	3,554	2,257	3,955	3,477
1995	13,373	3,585	2,294	3,947	3,547
1996	13,410	3,585	2,313	3,964	3,548
1997	13,488	3,617	2,335	3,989	3,547
1998	13,600	3,666	2,343	4,037	3,554
1999	13,770	3,735	2,350	4,123	3,562
2000	13,939	3,817	2,358	4,195	3,569
2001	14,099	3,889	2,366	4,266	3,578
2002	14,238	3,961	2,376	4,321	3,580
2003	14,312	4,003	2,384	4,348	3,577
2004	14,412	4,053	2,395	4,389	3,575
2005	14,500	4,102	2,407	4,420	3,571

* Projected.

NOTE: Projections are based on data through 1992. Because of rounding, details may not add to totals.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fall Enrollment in Colleges and Universities surveys and Integrated Postsecondary Education Data System (IPEDS) surveys. (This table was prepared August 1994.)

Table 15.—Undergraduate enrollment in public institutions, by sex and attendance status, with alternative projections: 50 States and D.C., fall 1980 to fall 2005

(In thousands)

Year	Total	Men		Women	
		Full-time	Part-time	Full-time	Part-time
1980	8,441	2,426	1,588	2,334	2,093
1981	8,648	2,452	1,639	2,373	2,185
1982	8,713	2,487	1,653	2,373	2,201
1983	8,697	2,482	1,635	2,385	2,195
1984	8,494	2,390	1,600	2,325	2,179
1985	8,478	2,357	1,596	2,331	2,193
1986	8,661	2,351	1,652	2,367	2,291
1987	8,919	2,375	1,701	2,449	2,393
1988	9,103	2,399	1,714	2,550	2,439
1989	9,488	2,470	1,801	2,663	2,553
1990	9,710	2,527	1,826	2,734	2,623
1991	10,148	2,610	1,921	2,851	2,766
1992	10,220	2,603	1,936	2,885	2,796
1993*	10,313	2,624	1,947	2,861	2,881
		Middle alternative projections			
1994	10,396	2,613	1,972	2,859	2,952
1995	10,594	2,620	1,990	2,984	3,000
1996	10,491	2,610	2,001	2,865	3,015
1997	10,562	2,629	2,016	2,888	3,029
1998	10,646	2,659	2,024	2,929	3,034
1999	10,773	2,712	2,035	2,984	3,042
2000	10,907	2,775	2,044	3,041	3,047
2001	11,020	2,831	2,051	3,086	3,052
2002	11,122	2,887	2,060	3,122	3,053
2003	11,167	2,920	2,068	3,130	3,049
2004	11,254	2,960	2,077	3,171	3,046
2005	11,330	3,000	2,089	3,199	3,042
		Low alternative projections			
1994	10,005	2,515	1,900	2,788	2,802
1995	10,089	2,500	1,895	2,900	2,794
1996	9,956	2,502	1,892	2,779	2,783
1997	10,000	2,526	1,894	2,798	2,782
1998	10,100	2,578	1,896	2,840	2,786
1999	10,226	2,635	1,899	2,900	2,792
2000	10,351	2,700	1,904	2,952	2,795
2001	10,460	2,757	1,905	2,999	2,799
2002	10,552	2,815	1,908	3,031	2,798
2003	10,604	2,846	1,911	3,051	2,796
2004	10,666	2,881	1,914	3,078	2,793
2005	10,730	2,918	1,920	3,102	2,790
		High alternative projections			
1994	10,776	2,689	2,015	2,973	3,099
1995	10,891	2,713	2,048	2,968	3,162
1996	10,923	2,714	2,065	2,981	3,163
1997	10,987	2,739	2,085	3,001	3,162
1998	11,075	2,777	2,092	3,037	3,169
1999	11,206	2,829	2,099	3,101	3,177
2000	11,336	2,891	2,107	3,154	3,184
2001	11,458	2,945	2,114	3,207	3,192
2002	11,562	2,998	2,123	3,247	3,194
2003	11,618	3,030	2,131	3,266	3,191
2004	11,693	3,067	2,140	3,296	3,190
2005	11,762	3,105	2,151	3,320	3,186

* Projected.

NOTE: Projections are based on data through 1992. Because of rounding, details may not add to totals.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fall Enrollment in Colleges and Universities surveys and Integrated Postsecondary Education Data System (IPEDS) surveys. (This table was prepared August 1994.)

Table 16.—Undergraduate enrollment in private institutions, by sex and attendance status, with alternative projections: 50 States and D.C., fall 1980 to fall 2005

(In thousands)

Year	Total	Men		Women	
		Full-time	Part-time	Full-time	Part-time
1980	2,033	800	185	801	246
1981	2,106	809	209	816	272
1982	2,112	812	219	811	270
1983	2,149	823	219	824	283
1984	2,124	805	212	827	280
1985	2,120	800	210	832	278
1986	2,137	796	219	839	284
1987	2,128	788	204	850	286
1988	2,213	807	217	886	304
1989	2,255	808	231	899	316
1990	2,250	810	217	905	317
1991	2,291	825	215	935	316
1992	2,320	823	222	937	338
1993*	2,373	844	233	945	351
Middle alternative projections					
1994	2,379	840	237	942	360
1995	2,435	841	240	987	367
1996	2,389	838	240	943	368
1997	2,403	842	242	950	369
1998	2,426	851	243	963	369
1999	2,465	869	244	983	369
2000	2,504	888	244	1,003	369
2001	2,541	907	245	1,019	370
2002	2,571	925	245	1,032	369
2003	2,589	937	246	1,037	369
2004	2,617	950	248	1,050	369
2005	2,639	963	249	1,059	368
Low alternative projections					
1994	2,296	807	228	919	342
1995	2,330	801	228	960	341
1996	2,282	801	227	915	339
1997	2,293	807	227	921	338
1998	2,324	824	227	935	338
1999	2,363	842	227	955	339
2000	2,404	863	228	974	339
2001	2,440	882	228	991	339
2002	2,472	902	228	1,003	339
2003	2,490	912	229	1,010	339
2004	2,511	924	229	1,020	338
2005	2,530	935	229	1,028	338
High alternative projections					
1994	2,467	865	242	982	378
1995	2,482	872	246	979	385
1996	2,487	871	248	983	385
1997	2,501	878	250	988	385
1998	2,525	889	251	1,000	385
1999	2,564	906	251	1,022	385
2000	2,603	926	251	1,041	385
2001	2,641	944	252	1,059	386
2002	2,676	963	253	1,074	386
2003	2,694	973	253	1,082	386
2004	2,719	986	255	1,093	385
2005	2,738	997	256	1,100	385

*Projected.

NOTE: Projections are based on data through 1992. Because of rounding, details may not add to totals.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fall Enrollment in Colleges and Universities surveys and Integrated Postsecondary Education Data System (IPEDS) surveys. (This table was prepared August 1994.)

Table 17.—Graduate enrollment in all institutions, by sex and attendance status, with alternative projections: 50 States and D.C., fall 1980 to fall 2005

(In thousands)

Year	Total	Men		Women	
		Full-time	Part-time	Full-time	Part-time
1980	1,343	281	394	204	466
1981	1,343	277	397	207	462
1982	1,322	280	390	205	447
1983	1,340	286	391	211	452
1984	1,345	286	386	215	459
1985	1,376	289	388	220	479
1986	1,435	294	399	228	514
1987	1,452	294	400	233	525
1988	1,472	304	393	249	526
1989	1,522	309	401	263	548
1990	1,586	321	416	278	571
1991	1,639	341	419	300	578
1992	1,670	352	421	315	582
1993*	1,774	351	464	326	633
Middle alternative projections					
1994	1,808	353	473	332	650
1995	1,825	353	480	331	661
1996	1,825	347	485	327	666
1997	1,827	342	490	324	671
1998	1,823	338	490	323	672
1999	1,820	336	490	322	672
2000	1,817	334	490	322	671
2001	1,812	332	490	321	669
2002	1,810	332	490	321	667
2003	1,801	333	488	315	665
2004	1,810	335	488	325	662
2005	1,811	337	488	327	659
Low alternative projections					
1994	1,735	335	459	324	617
1995	1,729	332	460	321	616
1996	1,720	328	462	316	614
1997	1,717	325	463	313	616
1998	1,718	327	463	312	616
1999	1,710	322	462	310	616
2000	1,708	322	462	310	614
2001	1,705	322	460	310	613
2002	1,702	323	459	310	610
2003	1,701	325	457	312	607
2004	1,702	327	455	315	605
2005	1,704	329	455	316	604
High alternative projections					
1994	1,871	371	481	341	678
1995	1,898	374	490	343	691
1996	1,898	371	496	338	693
1997	1,901	368	502	337	694
1998	1,901	368	503	335	695
1999	1,896	365	502	334	695
2000	1,897	367	502	334	694
2001	1,894	367	501	333	693
2002	1,892	368	501	333	690
2003	1,896	371	501	335	689
2004	1,899	375	501	337	686
2005	1,904	379	501	340	684

*Projected.

NOTE: Projections are based on data through 1992. Because of rounding, details may not add to totals.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fall Enrollment in Colleges and Universities surveys and Integrated Postsecondary Education Data System (IPEDS) surveys. (This table was prepared August 1994.)

Table 18.—Graduate enrollment in public institutions, by sex and attendance status, with alternative projections: 50 States and D.C., fall 1980 to fall 2005

(In thousands)

Year	Total	Men		Women	
		Full-time	Part-time	Full-time	Part-time
1980	900	180	245	137	337
1981	887	177	242	138	329
1982	870	180	237	136	317
1983	872	184	235	140	313
1984	870	182	229	142	317
1985	891	181	232	144	333
1986	941	188	244	150	358
1987	945	185	244	152	364
1988	949	193	236	163	357
1989	978	195	242	171	369
1990	1,023	203	253	180	388
1991	1,050	215	255	192	388
1992	1,057	221	253	200	383
1993*	1,135	221	281	209	424
Middle alternative projections					
1994	1,157	223	286	213	435
1995	1,167	223	290	212	442
1996	1,168	219	293	210	446
1997	1,169	216	296	208	449
1998	1,166	213	296	207	450
1999	1,165	212	296	207	450
2000	1,163	211	296	207	449
2001	1,159	209	296	206	448
2002	1,157	209	296	206	446
2003	1,152	210	295	202	445
2004	1,157	211	295	208	443
2005	1,158	212	295	210	441
Low alternative projections					
1994	1,109	211	277	208	413
1995	1,105	209	278	206	412
1996	1,100	207	279	203	411
1997	1,098	205	280	201	412
1998	1,098	206	280	200	412
1999	1,093	203	279	199	412
2000	1,092	203	279	199	411
2001	1,090	203	278	199	410
2002	1,088	204	277	199	408
2003	1,087	205	276	200	406
2004	1,088	206	275	202	405
2005	1,089	207	275	203	404
High alternative projections					
1994	1,198	234	291	219	454
1995	1,215	236	296	220	463
1996	1,215	234	300	217	464
1997	1,217	232	304	216	465
1998	1,217	232	304	215	466
1999	1,214	230	304	214	466
2000	1,214	231	304	214	465
2001	1,212	231	303	214	464
2002	1,211	232	303	214	462
2003	1,213	234	303	215	461
2004	1,214	236	303	216	459
2005	1,218	239	303	218	458

* Projected.

NOTE: Projections are based on data through 1992. Because of rounding, details may not add to totals.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fall Enrollment in Colleges and Universities surveys and Integrated Postsecondary Education Data System (IPEDS) surveys. (This table was prepared August 1994.)

Table 19.—Graduate enrollment in private institutions, by sex and attendance status, with alternative projections: 50 States and D.C., fall 1980 to fall 2005

(In thousands)

Year	Total	Men		Women	
		Full-time	Part-time	Full-time	Part-time
1980	442	100	147	67	128
1981	456	100	155	69	132
1982	453	100	153	69	131
1983	468	103	156	71	138
1984	476	104	156	75	142
1985	486	108	156	76	147
1986	494	106	155	78	156
1987	507	108	156	82	161
1988	522	111	157	86	168
1989	544	114	159	92	179
1990	563	118	163	98	184
1991	589	126	164	109	190
1992	613	131	168	115	199
1993*	639	130	183	117	209
		Middle alternative projections			
1994	651	130	187	119	215
1995	658	130	190	119	219
1996	657	128	192	117	220
1997	658	126	194	116	222
1998	657	125	194	116	222
1999	655	124	194	115	222
2000	654	123	194	115	222
2001	653	123	194	115	221
2002	653	123	194	115	221
2003	649	123	193	113	220
2004	653	124	193	117	219
2005	653	125	193	117	218
		Low alternative projections			
1994	626	124	182	116	204
1995	624	123	182	115	204
1996	620	121	183	113	203
1997	619	120	183	112	204
1998	620	121	183	112	204
1999	617	119	183	111	204
2000	616	119	183	111	203
2001	615	119	182	111	203
2002	614	119	182	111	202
2003	614	120	181	112	201
2004	614	121	180	113	200
2005	615	122	180	113	200
		High alternative projections			
1994	673	137	190	122	224
1995	683	138	194	123	228
1996	683	137	196	121	229
1997	684	136	198	121	229
1998	684	136	199	120	229
1999	682	135	198	120	229
2000	683	136	198	120	229
2001	682	136	198	119	229
2002	681	136	198	119	228
2003	683	137	198	120	228
2004	685	139	198	121	227
2005	686	140	198	122	226

* Projected.

NOTE: Projections are based on data through 1992. Because of rounding, details may not add to totals.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fall Enrollment in Colleges and Universities surveys and Integrated Postsecondary Education Data System (IPEDS) surveys. (This table was prepared August 1994.)

Table 20.—First-professional enrollment in all institutions, by sex and attendance status, with alternative projections: 50 States and D.C., fall 1980 to fall 2005

(In thousands)

Year	Total	Men		Women	
		Full-time	Part-time	Full-time	Part-time
1980	278	181	18	70	9
1981	275	175	18	73	9
1982	278	174	17	78	9
1983	279	169	19	81	10
1984	279	166	19	83	10
1985	274	162	17	84	10
1986	270	159	15	87	9
1987	268	154	16	88	10
1988	267	151	16	90	10
1989	274	153	16	95	10
1990	274	150	17	96	11
1991	281	152	18	100	11
1992	282	151	18	101	12
1993*	302	160	20	109	13
Middle alternative projections					
1994	306	161	20	112	13
1995	305	161	20	111	13
1996	301	158	20	110	13
1997	298	156	20	109	13
1998	297	155	20	109	13
1999	294	153	20	108	13
2000	294	153	20	108	13
2001	292	152	20	107	13
2002	293	152	20	108	13
2003	291	153	20	105	13
2004	295	153	20	109	13
2005	297	154	20	110	13
Low alternative projections					
1994	293	153	19	109	12
1995	291	152	19	108	12
1996	288	150	19	107	12
1997	285	148	20	105	12
1998	285	148	20	105	12
1999	283	147	19	105	12
2000	284	148	19	105	12
2001	283	147	19	105	12
2002	284	148	19	105	12
2003	284	148	19	105	12
2004	284	148	19	105	12
2005	287	150	19	106	12
High alternative projections					
1994	317	170	20	114	13
1995	318	170	20	114	14
1996	319	170	21	114	14
1997	316	168	21	113	14
1998	314	167	21	112	14
1999	314	167	21	112	14
2000	314	167	21	112	14
2001	314	167	21	112	14
2002	314	167	21	112	14
2003	317	170	21	113	13
2004	319	171	21	114	13
2005	322	174	21	114	13

* Projected.

NOTE: Projections are based on data through 1992. Because of rounding, details may not add to totals.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fall Enrollment in Colleges and Universities surveys and Integrated Postsecondary Education Data System (IPEDS) surveys. (This table was prepared August 1994.)

Table 21.—First-professional enrollment in public institutions, by sex and attendance status, with alternative projections: 50 States and D.C., fall 1980 to fall 2005

(In thousands)

Year	Total	Men		Women	
		Full-time	Part-time	Full-time	Part-time
1980	114	79	4	32	2
1981	112	75	3	33	2
1982	113	73	3	35	2
1983	113	71	3	37	2
1984	114	70	3	38	2
1985	111	69	3	38	2
1986	112	67	3	39	2
1987	110	65	3	40	2
1988	109	64	2	41	2
1989	113	65	2	43	2
1990	112	63	3	44	2
1991	111	62	3	45	2
1992	112	61	3	45	3
1993*	121	66	3	49	3
Middle alternative projections					
1994	122	66	3	50	3
1995	122	66	3	50	3
1996	120	65	3	49	3
1997	119	64	3	49	3
1998	119	64	3	49	3
1999	117	63	3	48	3
2000	117	63	3	48	3
2001	117	63	3	48	3
2002	117	63	3	48	3
2003	116	63	3	47	3
2004	118	63	3	49	3
2005	119	64	3	49	3
Low alternative projections					
1994	118	63	3	49	3
1995	117	63	3	48	3
1996	116	62	3	48	3
1997	114	61	3	47	3
1998	114	61	3	47	3
1999	114	61	3	47	3
2000	114	61	3	47	3
2001	114	61	3	47	3
2002	114	61	3	47	3
2003	114	61	3	47	3
2004	114	61	3	47	3
2005	115	62	3	47	3
High alternative projections					
1994	127	70	3	51	3
1995	127	70	3	51	3
1996	127	70	3	51	3
1997	126	69	3	51	3
1998	125	69	3	50	3
1999	125	69	3	50	3
2000	125	69	3	50	3
2001	125	69	3	50	3
2002	125	69	3	50	3
2003	127	70	3	51	3
2004	128	71	3	51	3
2005	129	72	3	51	3

*Projected.

NOTE: Projections are based on data through 1992. Because of rounding, details may not add to totals.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fall Enrollment in Colleges and Universities surveys and Integrated Postsecondary Education Data System (IPEDS) surveys. (This table was prepared August 1994.)

Table 22.—First-professional enrollment in private institutions, by sex and attendance status, with alternative projections: 50 states and D.C., fall 1980 to fall 2005

(In thousands)

Year	Total	Men		Women	
		Full-time	Part-time	Full-time	Part-time
1980	163	104	16	38	7
1981	162	101	14	40	7
1982	165	101	14	43	7
1983	165	97	16	44	8
1984	164	96	16	43	8
1985	162	93	14	46	8
1986	158	91	12	48	7
1987	158	88	14	48	8
1988	158	87	14	49	8
1989	162	87	14	52	9
1990	162	86	15	52	9
1991	169	90	15	55	9
1992	170	90	15	56	9
1993*	181	94	17	60	10
Middle alternative projections					
1994	184	95	17	62	10
1995	183	95	17	61	10
1996	181	93	17	61	10
1997	179	92	17	60	10
1998	178	91	17	60	10
1999	177	90	17	60	10
2000	177	90	17	60	10
2001	175	89	17	59	10
2002	176	89	17	60	10
2003	175	90	17	58	10
2004	177	90	17	60	10
2005	178	90	17	61	10
Low alternative projections					
1994	175	90	16	60	9
1995	174	89	16	60	9
1996	172	88	16	59	9
1997	171	87	17	58	9
1998	171	87	17	58	9
1999	169	86	16	58	9
2000	170	87	16	58	9
2001	169	86	16	58	9
2002	170	87	16	58	9
2003	170	87	16	58	9
2004	170	87	16	58	9
2005	172	88	16	59	9
High alternative projections					
1994	190	100	17	63	10
1995	191	100	17	63	11
1996	192	100	18	63	11
1997	190	99	18	62	11
1998	189	98	18	62	11
1999	189	98	18	62	11
2000	189	98	18	62	11
2001	189	98	18	62	11
2002	189	98	18	62	11
2003	190	100	18	62	10
2004	191	100	18	63	10
2005	193	102	18	63	10

* Projected.

NOTE: Projections are based on data through 1992. Because of rounding, details may not add to totals.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fall Enrollment in Colleges and Universities surveys and Integrated Postsecondary Education Data System (IPEDS) surveys. (This table was prepared August 1994.)

Table 23.—Full-time-equivalent enrollment in all institutions of higher education, by level of student and type of institution, with alternative projections: 50 States and D.C., fall 1980 to fall 2005

(In thousands)

Year	Total	Undergraduate		Graduate	First-professional
		4-year	2-year	4-year	4-year
1980	8,819	5,109	2,658	790	263
1981	9,015	5,188	2,765	801	262
1982	9,092	5,194	2,843	790	266
1983	9,166	5,254	2,841	805	266
1984	8,952	5,215	2,659	814	263
1985	8,943	5,204	2,649	829	261
1986	9,064	5,241	2,704	859	259
1987	9,230	5,363	2,743	868	256
1988	9,467	5,517	2,800	892	256
1989	9,781	5,628	2,967	922	265
1990	9,984	5,744	3,016	963	261
1991	10,361	5,804	3,280	1,010	267
1992	10,443	5,826	3,311	1,038	268
1993*	10,579	5,943	3,267	1,082	287
		Middle alternative projections			
1994	10,619	5,935	3,293	1,100	291
1995	10,829	6,080	3,353	1,105	290
1996	10,652	5,939	3,328	1,099	286
1997	10,709	5,974	3,358	1,095	283
1998	10,802	6,041	3,388	1,090	282
1999	10,949	6,150	3,433	1,087	279
2000	11,110	6,268	3,478	1,085	279
2001	11,245	6,375	3,512	1,081	277
2002	11,372	6,470	3,543	1,080	278
2003	11,423	6,523	3,550	1,074	276
2004	11,548	6,602	3,580	1,085	280
2005	11,645	6,667	3,608	1,088	282
		Low alternative projections			
1994	10,250	5,736	3,178	1,056	279
1995	10,369	5,837	3,205	1,050	277
1996	10,187	5,697	3,175	1,041	274
1997	10,233	5,730	3,196	1,036	271
1998	10,361	5,822	3,231	1,037	271
1999	10,511	5,933	3,279	1,030	269
2000	10,671	6,050	3,322	1,029	270
2001	10,811	6,160	3,354	1,028	269
2002	10,934	6,253	3,383	1,028	270
2003	11,005	6,310	3,395	1,030	270
2004	11,092	6,374	3,414	1,033	270
2005	11,178	6,432	3,438	1,036	273
		High alternative projections			
1994	11,002	6,153	3,406	1,140	302
1995	11,076	6,176	3,444	1,153	303
1996	11,096	6,184	3,460	1,148	303
1997	11,156	6,218	3,491	1,147	300
1998	11,255	6,289	3,523	1,145	298
1999	11,411	6,402	3,570	1,141	298
2000	11,572	6,517	3,614	1,143	298
2001	11,719	6,630	3,649	1,141	298
2002	11,850	6,731	3,680	1,141	298
2003	11,929	6,787	3,695	1,145	302
2004	12,030	6,859	3,717	1,150	304
2005	12,122	6,918	3,741	1,157	307

* Projected.

NOTE: Projections are based on data through 1992. Because of rounding, details may not add to totals.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fall Enrollment in Colleges and Universities surveys and Integrated Postsecondary Education Data System (IPEDS) surveys. (This table was prepared August 1994.)

Table 24.—Full-time-equivalent enrollment in public institutions of higher education, by level of student and type of institution, with alternative projections: 50 States and D.C., fall 1980 to fall 2005

(In thousands)

Year	Total	Undergraduate		Graduate	First-professional
		4-year	2-year	4-year	4-year
1980	6,642	3,524	2,484	522	113
1981	6,781	3,575	2,573	524	110
1982	6,851	3,597	2,630	514	110
1983	6,881	3,635	2,616	520	111
1984	6,685	3,605	2,447	521	111
1985	6,668	3,601	2,428	529	110
1986	6,778	3,629	2,483	556	110
1987	6,938	3,731	2,542	557	108
1988	7,097	3,827	2,592	571	107
1989	7,372	3,921	2,752	587	112
1990	7,558	4,015	2,819	615	109
1991	7,863	4,046	3,068	640	109
1992	7,914	4,036	3,117	652	109
1993*	7,991	4,131	3,057	686	118
		Middle alternative projections			
1994	8,025	4,126	3,083	697	119
1995	8,183	4,225	3,139	700	119
1996	8,058	4,128	3,116	697	117
1997	8,106	4,152	3,144	694	116
1998	8,178	4,200	3,172	690	116
1999	8,290	4,274	3,212	689	114
2000	8,413	4,356	3,255	688	114
2001	8,515	4,431	3,285	685	114
2002	8,610	4,496	3,315	684	114
2003	8,647	4,533	3,321	680	113
2004	8,739	4,588	3,349	687	115
2005	8,813	4,633	3,375	689	116
		Low alternative projections			
1994	7,746	3,987	2,975	669	115
1995	7,833	4,056	2,998	665	114
1996	7,703	3,958	2,971	660	113
1997	7,741	3,982	2,991	657	111
1998	7,837	4,046	3,023	657	111
1999	7,953	4,123	3,066	652	111
2000	8,072	4,204	3,105	652	111
2001	8,177	4,280	3,134	651	111
2002	8,268	4,345	3,160	651	111
2003	8,320	4,384	3,172	652	111
2004	8,384	4,429	3,190	655	111
2005	8,449	4,469	3,211	656	112
		High alternative projections			
1994	8,313	4,276	3,189	723	124
1995	8,374	4,293	3,225	731	124
1996	8,391	4,298	3,240	728	124
1997	8,440	4,322	3,268	727	123
1998	8,517	4,371	3,298	726	122
1999	8,635	4,449	3,341	723	122
2000	8,756	4,529	3,381	724	122
2001	8,868	4,608	3,415	723	122
2002	8,965	4,676	3,443	723	122
2003	9,022	4,716	3,456	726	124
2004	9,095	4,766	3,476	728	125
2005	9,165	4,807	3,499	733	126

* Projected.

NOTE: Projections are based on data through 1992. Because of rounding, details may not add to totals.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fall Enrollment in Colleges and Universities surveys and Integrated Postsecondary Education Data System (IPEDS) surveys. (This table was prepared August 1994.)

Table 25.—Full-time-equivalent enrollment in private institutions of higher education, by level of student and type of institution, with alternative projections: 50 States and D.C., fall 1980 to fall 2005

(In thousands)

Year	Total	Undergraduate		Graduate	First-professional
		4-year	2-year	4-year	4-year
1980	2,177	1,585	174	268	150
1981	2,233	1,612	192	277	152
1982	2,241	1,596	213	276	156
1983	2,285	1,619	226	285	155
1984	2,267	1,610	212	293	152
1985	2,276	1,603	221	300	151
1986	2,286	1,613	221	303	149
1987	2,292	1,632	201	311	148
1988	2,370	1,690	209	321	149
1989	2,409	1,707	216	335	153
1990	2,426	1,729	197	348	152
1991	2,498	1,758	212	370	158
1992	2,529	1,790	194	386	159
1993*	2,587	1,812	210	396	169
		Middle alternative projections			
1994	2,594	1,809	210	402	172
1995	2,646	1,855	215	405	171
1996	2,594	1,811	212	402	169
1997	2,603	1,822	214	401	167
1998	2,623	1,842	216	400	166
1999	2,659	1,876	220	398	165
2000	2,697	1,912	223	397	165
2001	2,730	1,945	226	396	163
2002	2,762	1,973	228	396	164
2003	2,775	1,990	229	393	163
2004	2,809	2,014	232	398	165
2005	2,833	2,034	234	399	166
		Low alternative projections			
1994	2,504	1,749	204	387	164
1995	2,536	1,781	207	385	163
1996	2,484	1,738	203	381	161
1997	2,492	1,748	205	380	159
1998	2,524	1,776	208	381	159
1999	2,558	1,810	213	378	158
2000	2,599	1,846	217	377	159
2001	2,634	1,880	219	377	158
2002	2,666	1,909	222	376	159
2003	2,685	1,926	222	378	159
2004	2,708	1,946	224	379	159
2005	2,730	1,963	226	380	161
		High alternative projections			
1994	2,689	1,877	217	417	178
1995	2,703	1,883	219	422	178
1996	2,705	1,886	220	420	179
1997	2,716	1,897	222	420	177
1998	2,738	1,918	224	419	176
1999	2,775	1,953	228	418	176
2000	2,815	1,988	232	419	176
2001	2,851	2,023	234	418	176
2002	2,886	2,054	237	417	176
2003	2,907	2,071	238	419	177
2004	2,935	2,093	241	422	178
2005	2,957	2,111	242	424	180

*Projected

NOTE: Projections are based on data through 1992. Because of rounding, details may not add to totals.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fall Enrollment in Colleges and Universities surveys and Integrated Postsecondary Education Data System (IPEDS) surveys. (This table was prepared August 1994.)

Chapter 3

High School Graduates

The number of high school graduates is projected to increase over the projection period. This increase in the number of high school graduates reflects the overall change in the 18-year-old population during the same period (figure 29). Increases in the number of graduates are expected for both public and private schools.

The tabulations below provide the following information about trends in the number of high school graduates: (1) the average annual rate of change (in percent) for 1979–80 to 1992–93 and the projected growth rate for 1992–93 to 2004–2005 and (2) the rates of change for 1979–80 to 1986–87 and 1986–87 to 1992–93 and the projected growth rates for 1992–93 to 1998–99 and 1998–99 to 2004–2005.

Average annual rate of change (in percent)

	1979–80 to 1992–93	Projected: 1992–93 to 2004–2005
Total	-1.5	1.5
Public	-1.5	1.5
Private	-1.1	1.5

Average annual rate of change (in percent)

	1979–80 to 1986–87	1986–87 to 1992–93	Projected: 1992–93 to 1998–99	Projected: 1998–99 to 2004–2005
Total	-1.7	-1.2	1.8	1.2
Public	-1.7	-1.2	1.8	1.2
Private	-1.5	-0.5	1.9	1.2

Total High School Graduates

The number of high school graduates from public and private schools decreased from 3.0 million in 1979–80 to 2.6 million in 1985–86 (table 26 and figure 30). After 1985–86, this number increased to 2.8 million in 1987–88. Then, it decreased to around 2.5 million in 1992–93, a decrease of 17 percent from 1979–80, or an average annual rate of decline of 1.5 percent. Over the projection period, the total number of high school graduates is expected to remain around 2.5 million in 1993–94 and 1994–95. Thereafter, it is projected to rise to 3.0 million by 2004–2005, an increase of 20 percent from 1992–93, or an average annual growth rate of 1.5 percent. During the projection period, the growth rate will be higher in the first half of the projection period (1992–93 to 1998–99) than the growth rate in the second half (1998–99 to 2004–2005), 1.8 percent per year versus 1.2 percent per year.

High School Graduates, by Control of Institution

The number of graduates of public high schools decreased from 2.7 million in 1979–80 to 2.4 million in 1985–86 (figure 31). Then, it increased to 2.5 million in 1987–88 before declining to about 2.3 million in 1992–93, a decrease of 18 percent from 1979–80, or an average annual rate of decline of 1.5 percent. Over the projection period, public high school graduates are projected to increase to 2.7 million by 2004–2005, an increase of 20 percent from 1992–93, or an average annual growth rate of 1.5 percent. During the projection period, the growth rate will be higher in the first half of the projection period (1992–93 to 1998–99) than the growth rate in the second half (1998–99 to 2004–2005), 1.8 percent per year versus 1.2 percent per year (figure 32).

The number of graduates of private high schools is projected to increase from an estimated 257,000 in 1992–93 to 309,000 by 2004–2005, an increase of 20 percent, or an average annual growth rate of 1.5 percent. During the projection period, the growth rate will be higher in the first half of the projection period (1992–93 to 1998–99) than the growth rate in the second half (1998–99 to 2004–2005), 1.9 percent per year versus 1.2 percent per year.

Figure 29
18-year-old population, with projections: 1980 to 2005

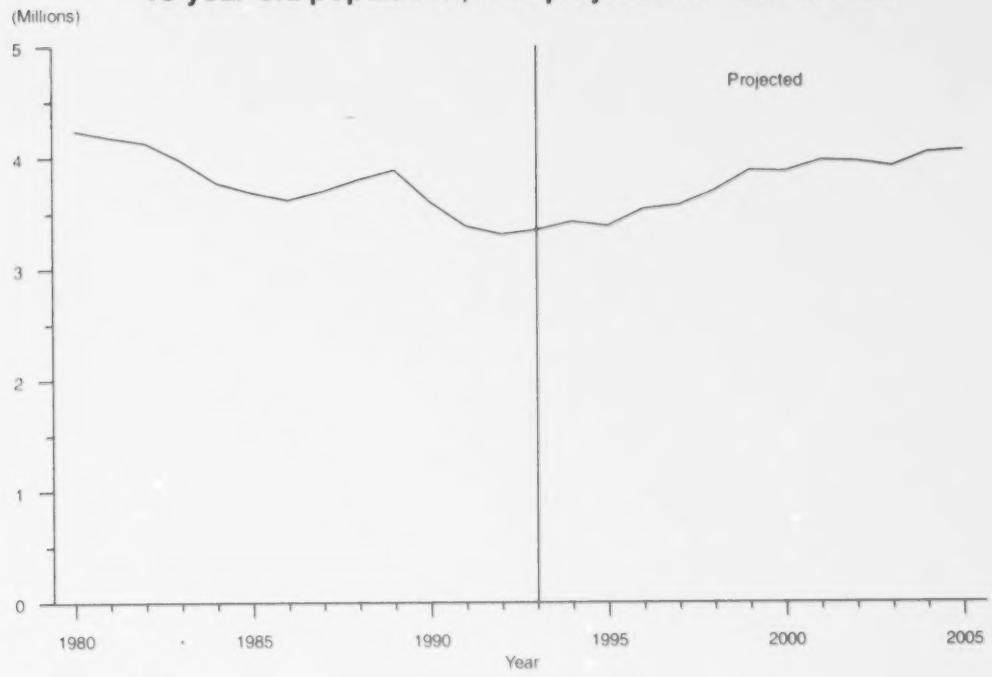

Figure 30
High school graduates, with projections: 1979-80 to 2004-2005

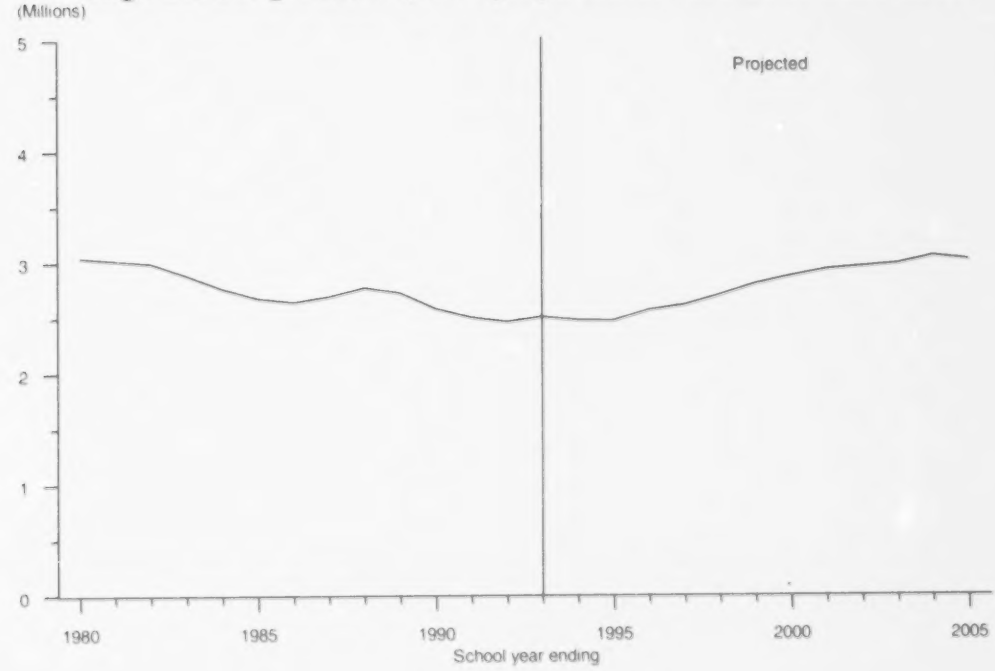

Figure 31
High school graduates, by control of institution, with projections: 1979-80 to 2004-2005

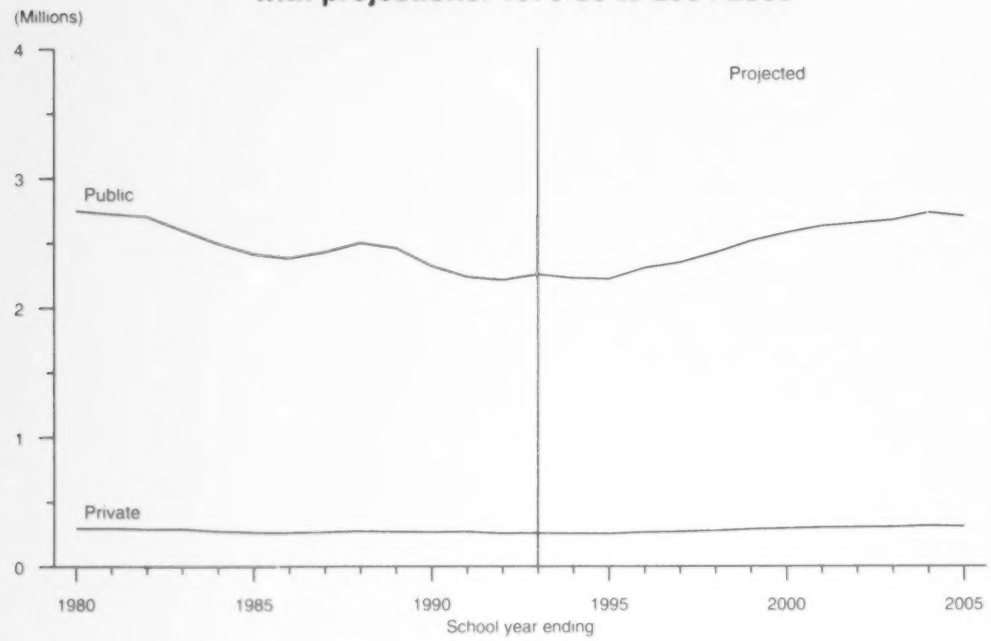

Figure 32
Average annual rates of change for high school graduates

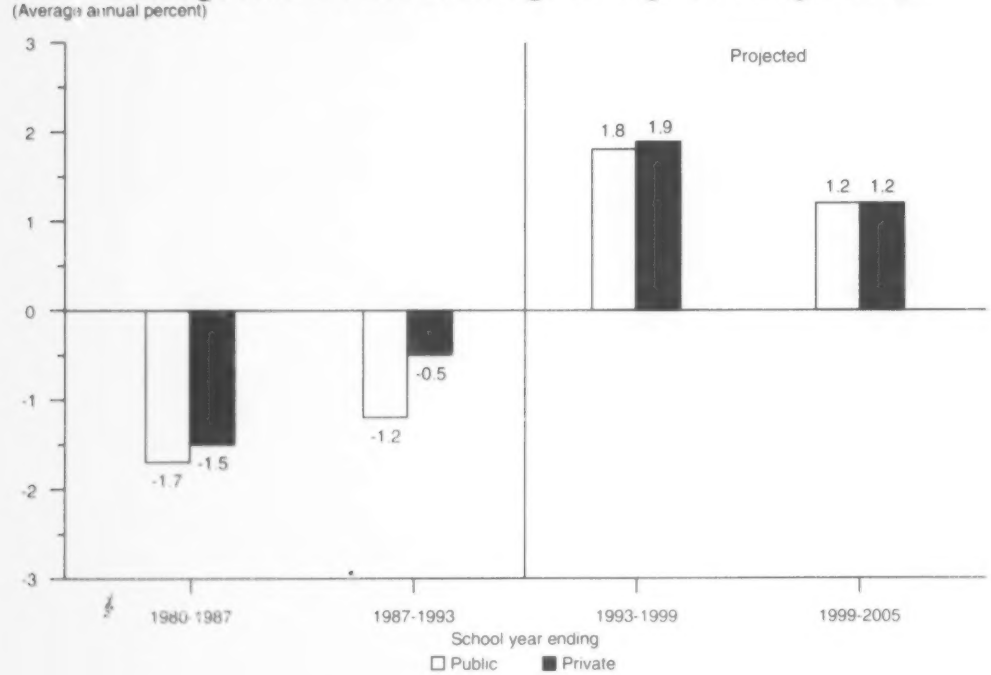

Table 26.—High school graduates, by control of institution, with projections: 50 States and D.C., 1979–80 to 2004–2005

(In thousands)

Year ending	Total	Public	Private
1980	3,043	2,748	295
1981	3,020	2,725	295
1982	2,995	2,705	290
1983	2,888	2,598	290
1984	2,767	2,495	272
1985	2,677	2,414	263
1986	2,643	2,383	260
1987	2,694	2,429	265
1988	2,773	2,500	273
1989	2,727	2,459	268
1990	2,586	2,320	266
1991	2,503	2,235	268
1992	2,468	2,212	256
1993	2,512	[1]2,255	[1]257
		Projected	
1994	2,481	2,227	254
1995	2,474	2,221	253
1996	2,570	2,307	263
1997	2,616	2,348	268
1998	2,702	2,426	276
1999	2,803	2,516	287
2000	2,873	2,579	294
2001	2,929	2,629	300
2002	2,955	2,653	302
2003	2,982	2,677	305
2004	3,047	2,735	312
2005	3,016	2,707	309

[1] Estimate.
[2] Projected.

NOTE: Prior to 1989–90, numbers for private high school graduates were estimated by NCES. Because of rounding, details may not add to totals.

SOURCE: U.S. Department of Education, National Center for Education Statistics, *Statistics of Public Elementary and Secondary Schools*; Common Core of Data surveys; "Private Elementary and Secondary Education, 1983: Enrollment, Teachers, and Schools," *NCES Bulletin*, December 1984; 1985 Private School Survey; "Key Statistics for Private Elementary and Secondary Education: School Year 1988–89," *Early Estimates*; "Key Statistics for Private Elementary and Secondary Education: School Year 1990–91," *Early Estimates*; Public and Private Elementary and Secondary Education Statistics: School Year 1991–92," *Early Estimates*; "Public and Private Elementary and Secondary Education Statistics: School Year 1992–93," *Early Estimates*; and "Public Elementary and Secondary Education Statistics: School Year 1993–94," *Early Estimates*. (This table was prepared July 1994.)

Chapter 4

Earned Degrees Conferred

The historical growth in enrollment of women in institutions of higher education led to an increase in the number of earned degrees conferred. Between 1979–80 and 1992–93, the number of degrees awarded to women rose at all levels. In 1992–93, women earned the majority of associate, bachelor's, and master's degrees, and nearly two-fifths of doctor's and first-professional degrees. Over the projection period, the number of degrees awarded to women will continue to rise at all levels. With the exception of master's and doctor's degrees, the number of degrees awarded to men will increase over the projection period.

Three alternative projections of earned degrees by level and sex were developed. In general, the number of degrees was related to college-age populations and higher education enrollment by level enrolled and attendance status.

Associate Degrees

Between 1979–80 and 1982–83, the number of associate degrees increased from 401,000 to 456,000. Thereafter, it decreased to 435,000 in 1987–88. Since then, it increased to an estimated 500,000 in 1992–93 (table 27 and figure 33). Under the middle alternative, this number is expected to increase to 556,000 by 2004–2005, an increase of 11 percent from 1992–93. Under the low and high alternatives, the number of associate degrees is projected to range between 542,000 and 572,000 by 2004–2005. The number of associate degrees awarded to men increased from 184,000 in 1979–80 to 207,000 in 1982–83 and then decreased to 186,000 in 1988–89, before rising to an estimated 206,000 in 1992–93 (figure 34). Under the middle alternative, this number is projected to increase to 220,000 by 2004–2005, an increase of 7 percent from 1992–93. Under the low and high alternatives, the number of associate degrees awarded to men is expected to range between 215,000 and 224,000 by 2004–2005. The number of associate degrees awarded to women increased from 217,000 in 1979–80 to 294,000 in 1992–93, an increase of 35 percent. Under the middle alternative, this number is projected to increase to 337,000 by 2004–2005, an increase of 15 percent from 1992–93. Under the low and high alternatives, the number of associate degrees awarded to women is projected to range between 327,000 and 349,000 by 2004–2005.

Bachelor's Degrees

The number of bachelor's degrees increased from 929,000 in 1979–80 to an estimated 1,153,000 in 1992–93, an increase of 24 percent (table 28 and figure 35). Under the middle alternative, this number is expected to rise to 1,232,000 in 1998–99, decrease slightly to 1,198,000 in 2000–2001, and then increase to 1,264,000 by 2004–2005, an increase of 10 percent from 1992–93. Under the low and high alternatives in 2004–2005, the number of bachelor's degrees is projected to range between 1,229,000 and 1,315,000. The number of bachelor's degrees awarded to men declined from 474,000 in 1979–80 to 470,000 in 1980–81. Then, this number increased to 486,000 in 1985–86 and declined for two more years, before rising to an estimated 521,000 in 1992–93 (figure 36). Under the middle alternative, this number is expected to increase to 581,000 by 2004–2005, an increase of 12 percent from 1992–93. Under the low and high alternatives, the number of bachelor's degrees awarded to men is projected to range between 565,000 and 605,000 by 2004–2005. The number of bachelor's degrees awarded to women increased from 456,000 in 1979–80 to an estimated 632,000 in 1992–93, an increase of 39 percent. Under the middle alternative, this number is expected to increase to 683,000 by 2004–2005, an increase of 8 percent from 1992–93. Under the low and high alternatives, the number of bachelor's degrees awarded to women is projected to range between 664,000 and 711,000 by 2004–2005.

Master's Degrees

The number of master's degrees decreased from 298,000 in 1979–80 to 284,000 in 1983–84, before rising to an estimated 353,000 in 1992–93, an increase of 24 percent from 1983–84 (table 29 and figure 37). Under the middle alternative, this number is expected to increase to 399,000 in 1994–95, before decreasing to 362,000 by 2004–2005. Under the low and high alternatives, the number of master's degrees is projected to range between 346,000 and 402,000 by 2004–2005. The number of master's degrees awarded to men decreased from 151,000 in 1979–80 to 141,000 in 1986–87. Then, it increased to an estimated 163,000 in 1992–93 (figure 38). Under the middle alternative, this number is projected to increase to 192,000 in 1994–95, before decreasing to 156,000 by 2004–2005. Under the low and high alternatives, the number of master's degrees

awarded to men is projected to range between 154,000 and 190,000 by 2004–2005. The number of master's degrees awarded to women decreased from 147,000 in 1979–80 to 141,000 in 1983–84. Since then, it increased to an estimated 190,000 in 1992–93. Under the middle alternative, this number is expected to increase to 206,000 by 2004–2005, an increase of 8 percent from 1992–93. Under the low and high alternatives, the number of master's degrees awarded to women is projected to range between 191,000 and 211,000 by 2004–2005.

Doctor's Degrees

The number of doctor's degrees increased from 32,600 in 1979–80 to about 41,900 in 1992–93, an increase of 29 percent (table 30 and figure 39). Under the middle alternative, this number is expected to increase to 43,100 by 2004–2005. Under the low and high alternatives, the number of doctor's degrees is projected to range between 37,300 and 48,800 by 2004–2005. The number of doctor's degrees awarded to men decreased from 22,900 in 1979–80 to 21,900 in 1982–83. Then, it increased to 22,100 in 1983–84 before decreasing to 21,700 in 1984–85. Thereafter, it increased to an estimated 26,400 in 1992–93. Under the middle alternative, this number is expected to fall to 22,400 by 2004–2005, a decrease of 15 percent from 1992–93 (figure 40). Under the low and high alternatives, the number of doctor's degrees awarded to men is projected to range between 16,800 and 28,000 by 2004–2005. The number of doctor's degrees awarded to women rose from 9,700 in 1979–80 to an estimated 15,500 in 1992–93, an increase of 60 percent. Over the projection period, this pattern is expected to continue. Under the middle alternative, the number of doctor's degrees awarded to women is projected to climb to 20,700 by 2004–2005, an increase of 34 percent from 1992–93. Under the low and high alternatives, the number of doctor's degrees awarded to women is projected to range between 20,500 and 20,800 by 2004–2005. The share of doctor's degrees awarded to women, which was 30 percent in 1979–80 and 37 percent in 1992–93, is projected to climb to 48 percent by 2004–2005.

First-Professional Degrees

The number of first-professional degrees awarded rose from 70,100 in 1979–80 to 75,100 in 1984–85. Then, it decreased to 70,700 in 1987–88. Thereafter, it increased to 73,900 in 1992–93 (table 31 and figure 41). Under the middle alternative, this number is expected to increase to 83,500 in 1996–97 and then decrease to 80,000 by 2004–2005. Under the low and high alternatives, the number of first-professional degrees is projected to range between 78,000 and 86,200 by 2004–2005. The number of first-professional degrees awarded to men decreased from 52,700 in 1979–80 to about 44,200 in 1992–93, a decrease of 16 percent (figure 42). Under the middle alternative, this number is projected to increase to 49,100 in 1996–97, before decreasing to 46,800 by 2004–2005. Under the low and high alternatives, the number of first-professional degrees awarded to men is projected to range between 45,600 and 51,000 by 2004–2005. The number of first-professional degrees awarded to women increased from 17,400 in 1979–80 to an estimated 29,700 in 1992–93, an increase of 71 percent. Under the middle alternative, this number is expected to increase to 33,200 by 2004–2005, an increase of 12 percent from 1992–93. Under the low and high alternatives, the number of first-professional degrees awarded to women is projected to range between 32,400 and 35,200 by 2004–2005. The women's proportion of first-p ofessional degrees rose from 25 percent in 1979–80 to 40 percent in 1992–93. By 2004–2005, this proportion is expected to be 42 percent.

Figure 33
Associate degrees, with alternative projections: 1979-80 to 2004-2005

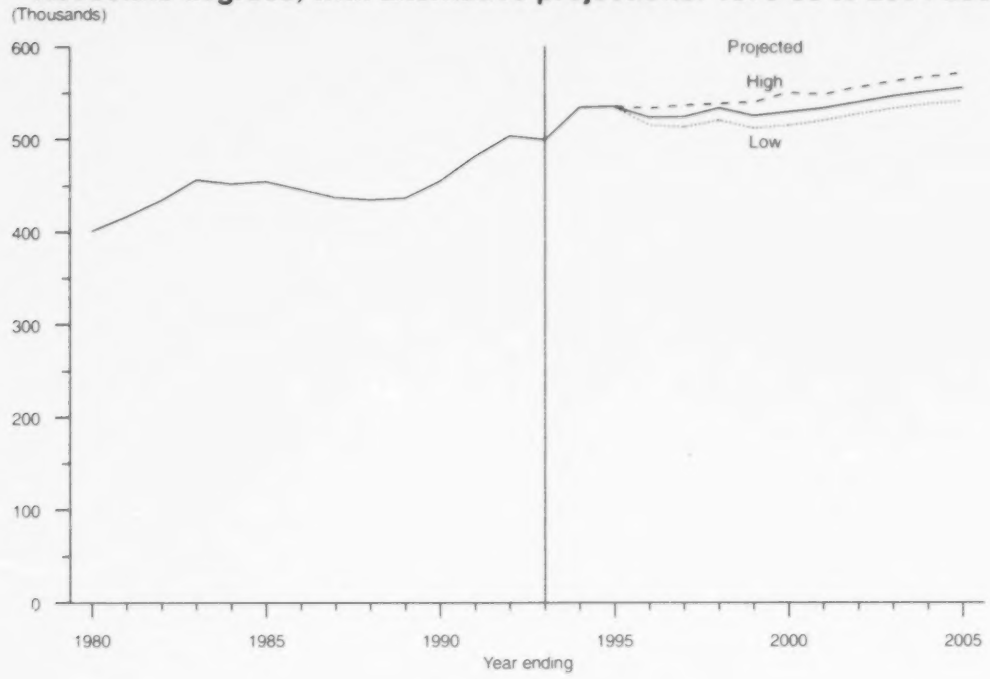

Figure 34
Associate degrees, by sex of recipient, with middle alternative projections: 1979-80 to 2004-2005

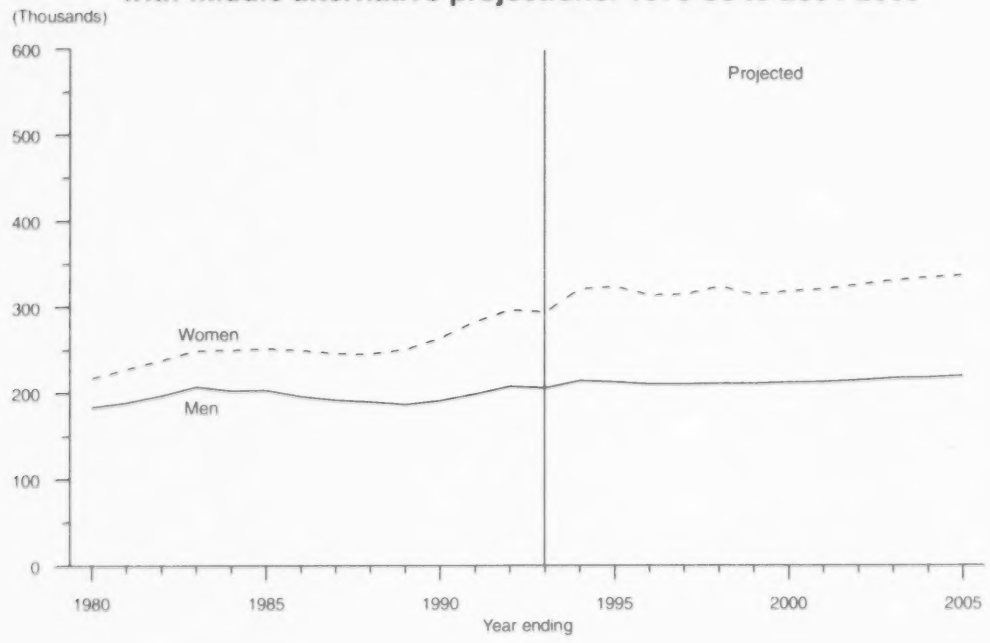

Figure 35
Bachelor's degrees, with alternative projections: 1979-80 to 2004-2005

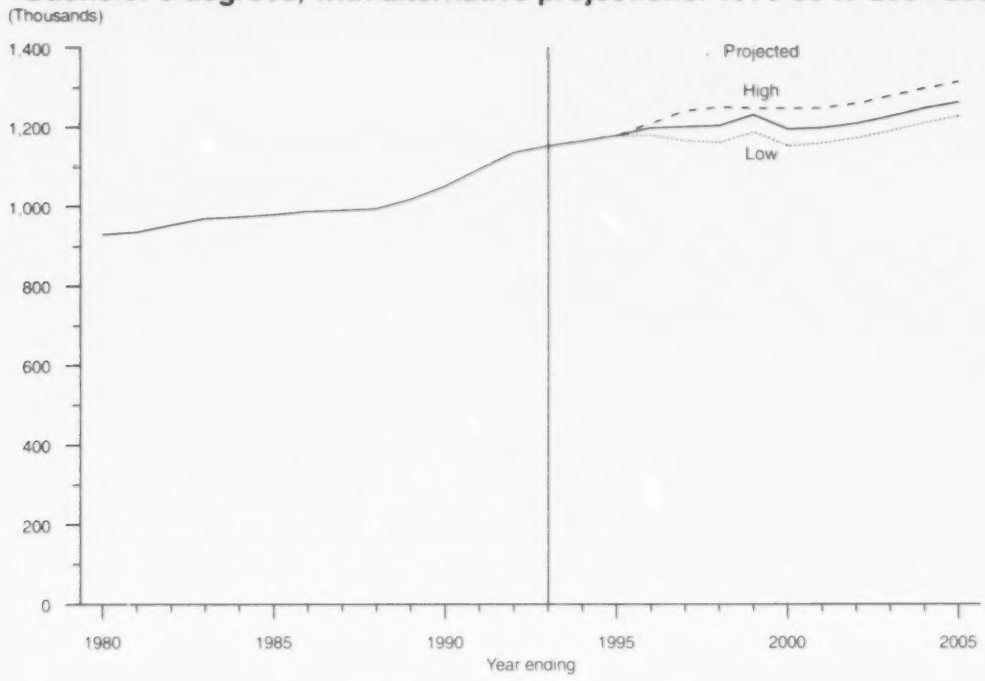

Figure 36
Bachelor's degrees, by sex of recipient, with middle alternative projections: 1979-80 to 2004-2005

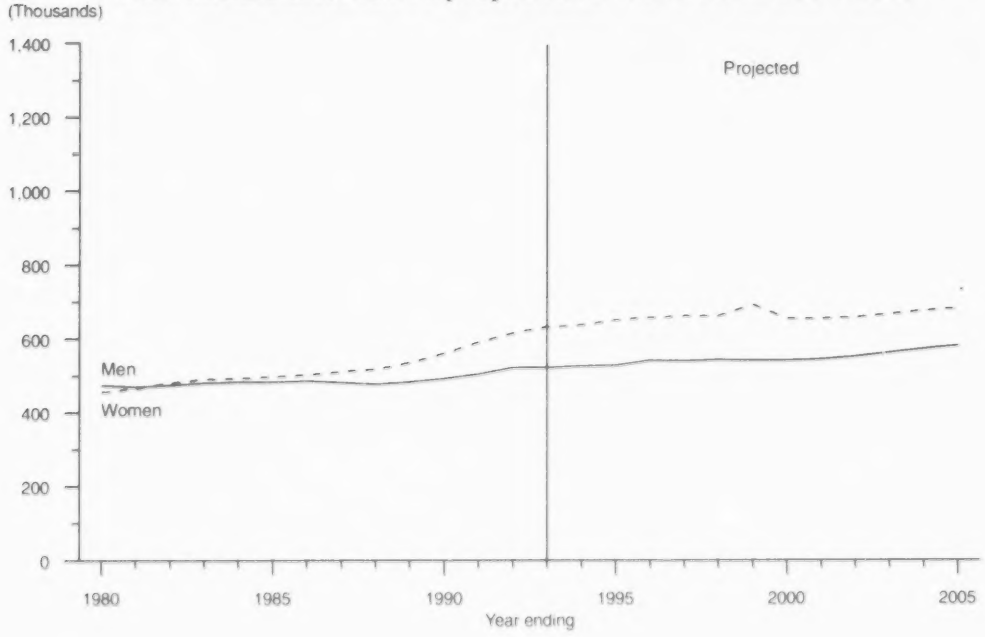

Figure 37
Master's degrees, with alternative projections: 1979-80 to 2004-2005

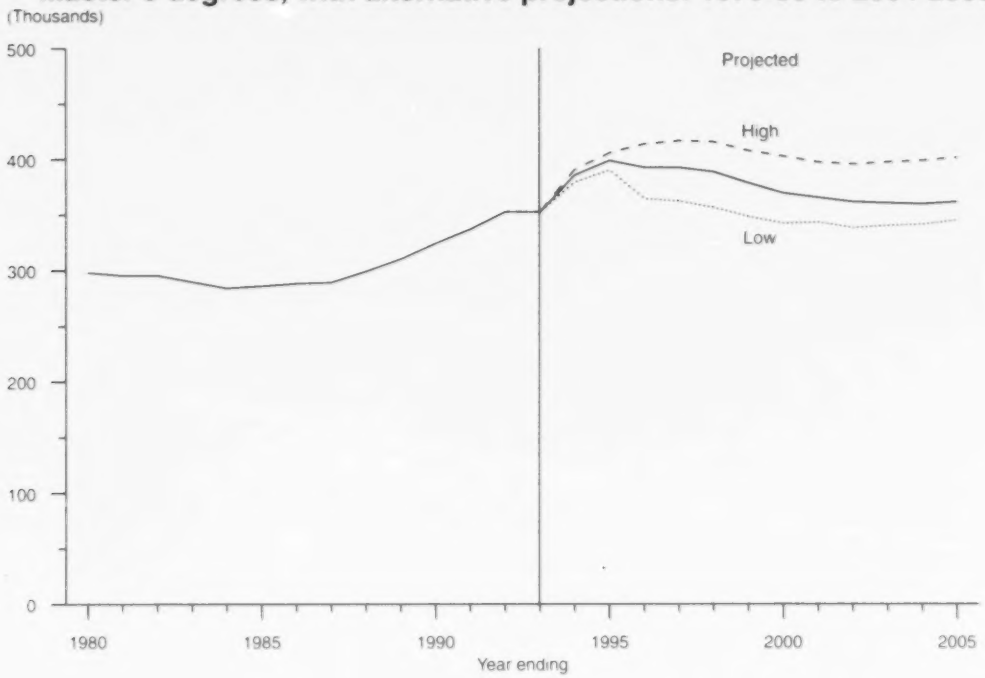

Figure 38
Master's degrees, by sex of recipient, with middle alternative projections: 1979-80 to 2004-2005

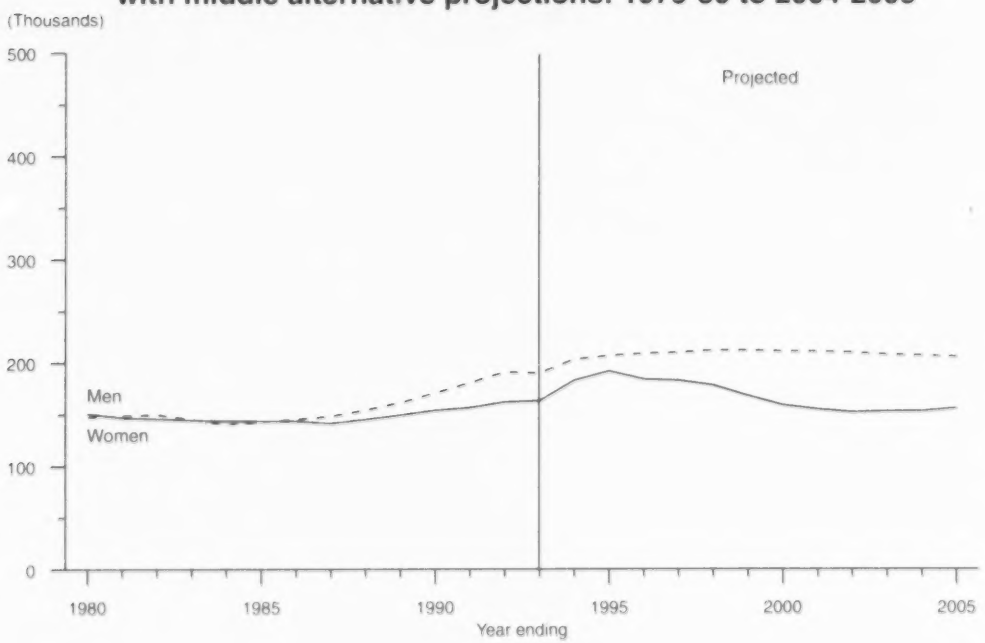

Figure 39
Doctor's degrees, with alternative projections: 1979-80 to 2004-2005

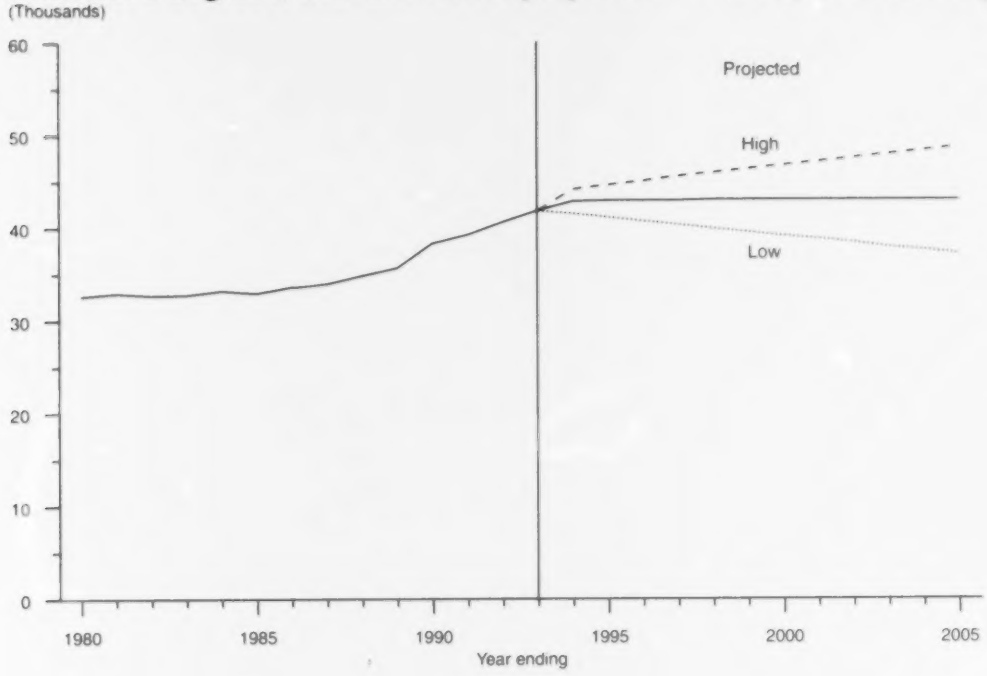

Figure 40
Doctor's degrees, by sex of recipient, with middle alternative projections: 1979-80 to 2004-2005

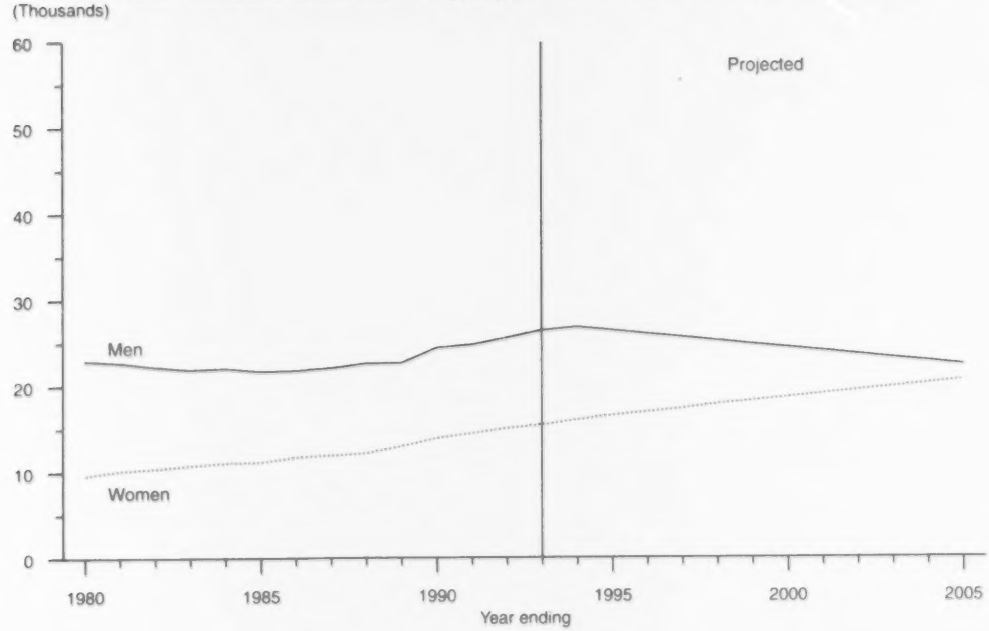

Figure 41
First-professional degrees, with alternative projections: 1979-80 to 2004-2005

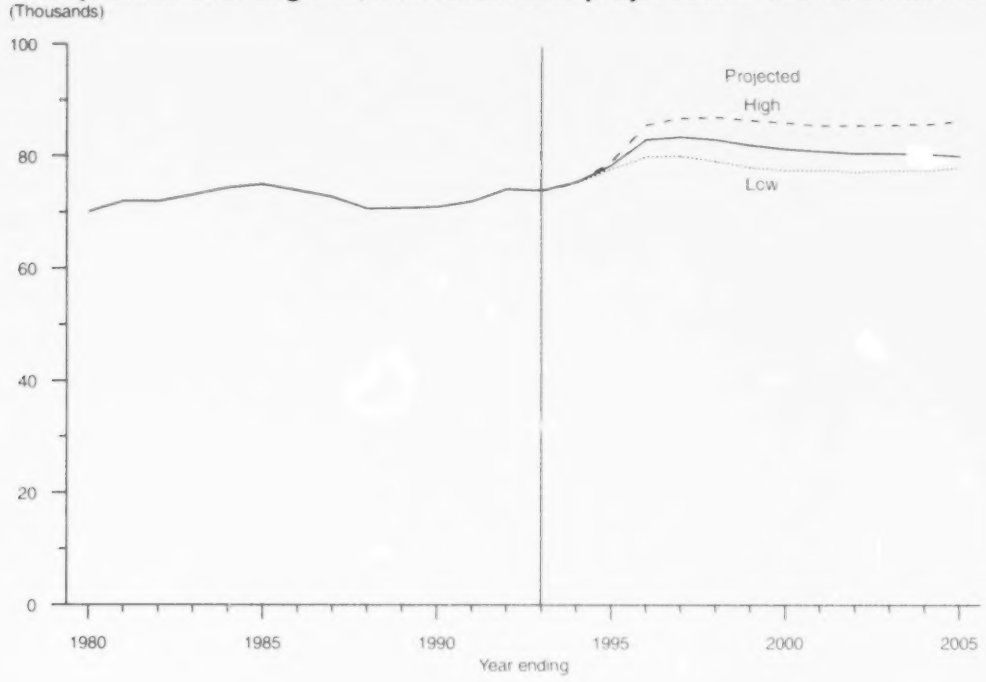

Figure 42
First-professional degrees, by sex of recipient, with middle alternative projections: 1979-80 to 2004-2005

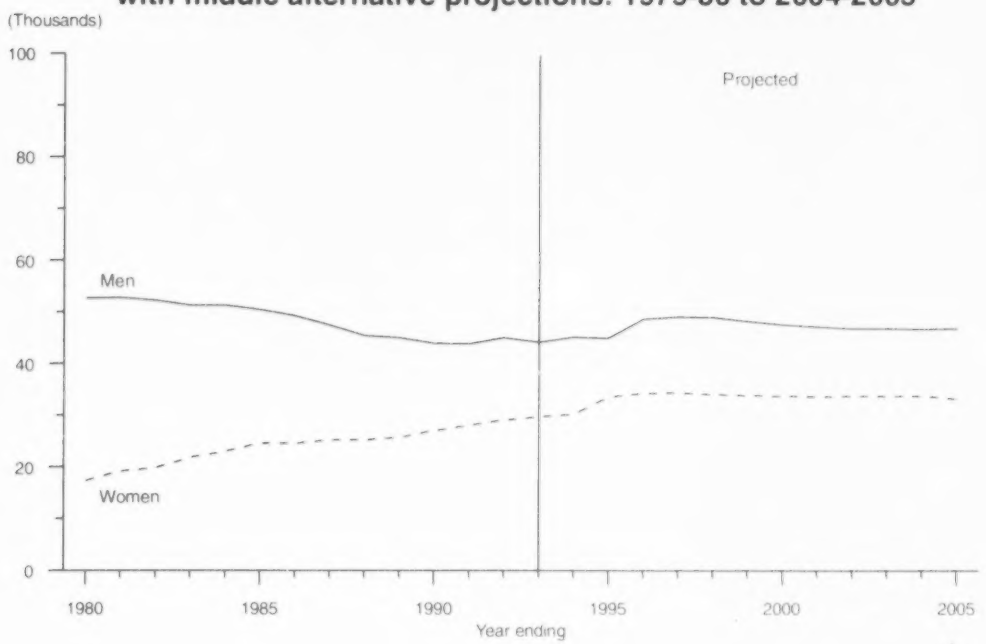

Table 27.—Associate degrees, by sex of recipient, with alternative projections: 50 States and D.C., 1979–80 to 2004–2005

Year ending	Total	Men	Women
1980	400,910	183,737	217,173
1981	416,377	188,638	227,739
1982	434,515	196,939	237,576
1983	456,441	207,141	249,300
1984	452,416	202,762	249,654
1985	454,712	202,932	251,780
1986	446,047	196,166	249,881
1987	436,308	190,842	245,466
1988	435,085	190,047	245,038
1989	436,764	186,316	250,448
1990	455,102	191,195	263,907
1991	481,720	198,634	283,086
1992	504,231	207,481	296,750
1993*	500,000	206,000	294,000
	Middle alternative projections		
1994	535,000	214,000	321,000
1995	536,000	213,000	324,000
1996	524,000	210,000	314,000
1997	525,000	210,000	315,000
1998	534,000	211,000	324,000
1999	526,000	211,000	315,000
2000	530,000	212,000	318,000
2001	534,000	213,000	321,000
2002	541,000	215,000	326,000
2003	547,000	217,000	331,000
2004	552,000	218,000	334,000
2005	556,000	220,000	337,000
	Low alternative projections		
1994	535,000	214,000	321,000
1995	536,000	213,000	324,000
1996	516,000	207,000	309,000
1997	514,000	207,000	307,000
1998	521,000	206,000	315,000
1999	513,000	206,000	307,000
2000	516,000	207,000	309,000
2001	521,000	209,000	312,000
2002	528,000	210,000	317,000
2003	534,000	212,000	322,000
2004	539,000	214,000	325,000
2005	542,000	215,000	327,000
	High alternative projections		
1994	535,000	214,000	321,000
1995	536,000	213,000	324,000
1996	534,000	212,000	322,000
1997	537,000	213,000	324,000
1998	539,000	214,000	324,000
1999	541,000	215,000	326,000
2000	551,000	222,000	329,000
2001	549,000	218,000	332,000
2002	557,000	219,000	337,000
2003	563,000	221,000	342,000
2004	568,000	222,000	346,000
2005	572,000	224,000	349,000

* Projected.

NOTE: Projections are based on data through 1991–92. Because of rounding, details may not add to totals.

SOURCE: U.S. Department of Education, National Center for Education Statistics, "Degrees and Other Formal Awards Conferred" survey and Integrated Postsecondary Education Data System (IPEDS), "Completions" survey. (This table was prepared August 1994.)

Table 28.—Bachelor's degrees, by sex of recipient, with alternative projections: 50 States and D.C., 1979–80 to 2004–2005

Year ending	Total	Men	Women
1980	929,417	473,611	455,806
1981	935,140	469,883	465,257
1982	952,998	473,364	479,634
1983	969,510	479,140	490,370
1984	974,309	482,319	491,990
1985	979,477	482,528	496,949
1986	987,823	485,923	501,900
1987	991,264	480,782	510,482
1988	994,829	477,203	517,626
1989	1,018,755	483,346	535,409
1990	1,051,344	491,696	559,648
1991	1,094,538	504,045	590,493
1992	1,136,553	520,811	615,742
1993*	1,153,000	521,000	632,000
		Middle alternative projections	
1994	1,165,000	526,000	638,000
1995	1,179,000	528,000	651,000
1996	1,198,000	541,000	657,000
1997	1,201,000	540,000	661,000
1998	1,204,000	543,000	661,000
1999	1,232,000	541,000	691,000
2000	1,196,000	541,000	655,000
2001	1,198,000	544,000	654,000
2002	1,210,000	552,000	658,000
2003	1,227,000	562,000	666,000
2004	1,248,000	572,000	676,000
2005	1,264,000	581,000	683,000
		Low alternative projections	
1994	1,165,000	526,000	638,000
1995	1,179,000	528,000	651,000
1996	1,180,000	522,000	657,000
1997	1,167,000	519,000	648,000
1998	1,162,000	517,000	645,000
1999	1,189,000	517,000	672,000
2000	1,154,000	518,000	635,000
2001	1,161,000	526,000	634,000
2002	1,173,000	535,000	639,000
2003	1,192,000	545,000	647,000
2004	1,212,000	555,000	656,000
2005	1,229,000	565,000	664,000
		High alternative projections	
1994	1,165,000	526,000	638,000
1995	1,179,000	528,000	651,000
1996	1,210,000	553,000	657,000
1997	1,241,000	556,000	685,000
1998	1,251,000	563,000	688,000
1999	1,248,000	563,000	685,000
2000	1,248,000	566,000	682,000
2001	1,249,000	569,000	680,000
2002	1,260,000	577,000	683,000
2003	1,279,000	586,000	693,000
2004	1,298,000	596,000	702,000
2005	1,315,000	605,000	711,000

*Projected.

NOTE: Projections are based on data through 1991–92. Because of rounding, details may not add to totals.

SOURCE: U.S. Department of Education, National Center for Education Statistics, "Degrees and Other Formal Awards Conferred" survey and Integrated Postsecondary Education Data System (IPEDS), "Completions" survey. (This table was prepared August 1994.)

Table 29.—Master's degrees, by sex of recipient, with alternative projections: 50 States and D.C., 1979–80 to 2004–2005

Year ending	Total	Men	Women
1980	298,081	150,749	147,332
1981	295,739	147,043	148,696
1982	295,546	145,532	150,014
1983	289,921	144,697	145,224
1984	284,263	143,595	140,668
1985	286,251	143,390	142,861
1986	288,567	143,508	145,059
1987	289,349	141,269	148,080
1988	299,317	145,163	154,154
1989	310,621	149,354	161,267
1990	324,301	153,653	170,648
1991	337,168	156,482	180,686
1992	352,838	161,842	190,996
1993[1]	353,000	163,000	190,000
		Middle alternative projections	
1994	386,000	183,000	203,000
1995	399,000	192,000	207,000
1996	393,000	184,000	209,000
1997	393,000	183,000	210,000
1998	389,000	178,000	212,000
1999	379,000	168,000	212,000
2000	370,000	159,000	211,000
2001	366,000	155,000	211,000
2002	362,000	152,000	210,000
2003	361,000	153,000	208,000
2004	360,000	153,000	207,000
2005	362,000	156,000	206,000
		Low alternative projections	
1994	380,000	183,000	198,000
1995	391,000	192,000	198,000
1996	365,000	168,000	198,000
1997	363,000	166,000	197,000
1998	357,000	160,000	197,000
1999	349,000	152,000	197,000
2000	343,000	147,000	196,000
2001	344,000	148,000	196,000
2002	339,000	145,000	195,000
2003	341,000	147,000	193,000
2004	342,000	150,000	192,000
2005	346,000	154,000	191,000
		High alternative projections	
1994	391,000	183,000	208,000
1995	406,000	192,000	214,000
1996	414,000	198,000	217,000
1997	417,000	200,000	217,000
1998	416,000	199,000	217,000
1999	408,000	191,000	217,000
2000	404,000	187,000	217,000
2001	398,000	182,000	216,000
2002	396,000	181,000	215,000
2003	398,000	184,000	214,000
2004	399,000	186,000	213,000
2005	402,000	190,000	211,000

[1] Projected.

NOTE: Projections are based on data through 1991–92. Because of rounding, details may not add to totals.

SOURCE: U.S. Department of Education, National Center for Education Statistics, "Degrees and Other Formal Awards Conferred" survey and Integrated Postsecondary Education Data System (IPEDS), "Completions" survey. (This table was prepared August 1994.)

Table 30.—Doctor's degrees, by sex of recipient, with alternative projections: 50 States and D.C., 1979–80 to 2004–2005

Year ending	Total	Men	Women
1980	32,615	22,943	9,672
1981	32,958	22,711	10,247
1982	32,707	22,224	10,483
1983	32,775	21,902	10,873
1984	33,209	22,064	11,145
1985	32,943	21,700	11,243
1986	33,653	21,819	11,834
1987	34,041	22,061	11,980
1988	34,870	22,615	12,255
1989	35,720	22,648	13,072
1990	38,371	24,401	13,970
1991	39,294	24,756	14,538
1992	40,659	25,557	15,102
1993 *	41,900	26,400	15,500
		Middle alternative projections	
1994	42,900	26,800	16,100
1995	43,000	26,400	16,600
1996	43,000	26,000	17,000
1997	43,000	25,600	17,400
1998	43,100	25,200	17,900
1999	43,100	24,800	18,300
2000	43,100	24,400	18,700
2001	43,100	24,000	19,100
2002	43,100	23,600	19,500
2003	43,100	23,200	19,900
2004	43,100	22,800	20,300
2005	43,100	22,400	20,700
		Low alternative projections	
1994	41,600	25,600	16,000
1995	41,200	24,800	16,400
1996	40,800	24,000	16,800
1997	40,400	23,200	17,200
1998	40,000	22,400	17,600
1999	39,600	21,600	18,000
2000	39,200	20,800	18,400
2001	38,900	20,000	18,900
2002	38,500	19,200	19,300
2003	38,000	18,400	19,600
2004	37,700	17,600	20,100
2005	37,300	16,800	20,500
		High alternative projections	
1994	44,200	28,000	16,200
1995	44,700	28,000	16,700
1996	45,100	28,000	17,100
1997	45,600	28,000	17,600
1998	46,000	28,000	18,000
1999	46,400	28,000	18,400
2000	46,800	28,000	18,800
2001	47,200	28,000	19,200
2002	47,600	28,000	19,600
2003	48,000	28,000	20,000
2004	48,400	28,000	20,400
2005	48,800	28,000	20,800

* Projected.

NOTE: Projections are based on data through 1991–92. Because of rounding, details may not add to totals.

SOURCE: U.S. Department of Education, National Center for Education Statistics, "Degrees and Other Formal Awards Conferred" survey and Integrated Postsecondary Education Data System (IPEDS), "Completions" survey. (This table was prepared August 1994.)

Table 31.—First-professional degrees, by sex of recipient, with alternative projections: 50 States and D.C., 1979–80 to 2004–2005

Year ending	Total	Men	Women
1980	70,131	52,716	17,415
1981	71,956	52,792	19,164
1982	72,032	52,223	19,809
1983	73,136	51,310	21,826
1984	74,407	51,334	23,073
1985	75,063	50,455	24,608
1986	73,910	49,261	24,649
1987	71,617	46,523	25,094
1988	70,735	45,484	25,251
1989	70,856	45,046	25,810
1990	70,988	43,961	27,027
1991	71,948	43,846	28,102
1992	74,146	45,071	29,075
1993*	73,900	44,200	29,700
		Middle alternative projections	
1994	75,400	45,100	30,200
1995	78,400	44,900	33,500
1996	83,000	48,700	34,300
1997	83,500	49,100	34,400
1998	83,000	49,000	34,100
1999	82,000	48,200	33,800
2000	81,300	47,600	33,700
2001	80,900	47,200	33,600
2002	80,500	46,900	33,700
2003	80,500	46,900	33,700
2004	80,400	46,700	33,700
2005	80,000	46,800	33,200
		Low alternative projections	
1994	75,300	45,100	30,200
1995	77,800	44,900	32,900
1996	79,900	46,600	33,300
1997	80,000	46,700	33,300
1998	79,100	46,400	32,700
1999	78,100	45,800	32,300
2000	77,600	45,400	32,200
2001	77,600	45,500	32,100
2002	77,300	45,100	32,200
2003	77,500	45,300	32,200
2004	77,500	45,300	32,200
2005	78,000	45,600	32,400
		High alternative projections	
1994	75,300	45,100	30,200
1995	79,000	44,900	34,100
1996	85,600	50,300	35,300
1997	86,800	51,200	35,600
1998	87,000	51,600	35,400
1999	86,400	51,200	35,200
2000	86,000	50,900	35,100
2001	85,500	50,600	34,900
2002	85,500	50,500	35,000
2003	85,600	50,600	35,000
2004	85,700	50,700	35,000
2005	86,200	51,000	35,200

* Projected.

NOTE: Projections are based on data through 1991–92. Because of rounding, details may not add to totals.

SOURCE: U.S. Department of Education, National Center for Education Statistics, "Degrees and Other Formal Awards Conferred" survey and Integrated Postsecondary Education Data System (IPEDS), "Completions" survey. (This table was prepared August 1994.)

Chapter 5

Classroom Teachers

Between 1993 and 2005, the number of classroom teachers in elementary and secondary schools is projected to rise, primarily due to the increase in school enrollment during this period. Increases are expected in the numbers of both elementary and secondary teachers. The number of secondary teachers will increase at a faster rate than the number of elementary teachers. The numbers of public and private teachers are projected to grow.

Three alternative projections of the numbers of classroom teachers were developed to indicate a range of possible outcomes. These alternatives are based on different assumptions about the growth paths for two of the key variables in the teacher model—disposable income per capita and education revenue receipts from state sources per capita. Under the middle alternative, disposable income per capita is projected to increase by 14 percent between 1993 and 2005, while education revenue receipts from state sources per capita will rise by 19 percent during this period. The low alternative assumes that disposable income per capita and education revenue receipts from state sources per capita will increase by 9 percent and 13 percent, respectively. The high alternative assumes that disposable income per capita and education revenue receipts from state sources per capita will increase by 19 percent and 26 percent, respectively. The third variable in the teacher model, enrollment by organizational level, is the same for all three alternatives.

For classroom teachers, the following tabulations show: (1) the average annual rate of change (in percent) for 1980–93 and the three alternative projected rates of change for 1993–2005 and (2) the rates of change for 1980–87 and 1987–93 and the middle alternative projected rates of change for 1993–99 and 1999–2005.

Average annual rate of change (in percent)

	1980–93	1993–2005		
		Low	Middle	High
Total	1.1	1.1	1.3	1.6
Elementary	1.8	0.7	0.9	1.2
Secondary	0.1	1.7	2.0	2.2
Public	1.1	1.1	1.4	1.6
Private	1.5	1.0	1.2	1.5

Average annual rate of change (in percent)

(Middle alternative projections)

	1980–87	1987–93	Projected	
			1993–99	1999–2005
Total	0.8	1.5	1.8	0.9
Elementary	1.6	2.1	1.3	0.6
Secondary	-0.2	0.5	2.5	1.4
Public	0.6	1.6	1.8	0.9
Private	2.3	0.6	1.6	0.9

Elementary and Secondary School Teachers

The number of classroom teachers in elementary and secondary schools decreased from 2.48 million in 1980 to 2.44 million in 1981, a decrease of 2 percent (table 32 and figure 43). Thereafter, this number increased steadily to about 2.87 million in 1993, an increase of 18 percent from 1981. Under the middle alternative, the number of classroom teachers is projected to increase to 3.37 million by the year 2005, increasing at an average annual growth rate of 1.3 percent, for a 17-percent increase over the projection period. The growth rate will be higher in the first half of the projection period (1993–99) than in the second half (1999–2005), 1.8 percent per year versus 0.9 percent (figure 44). Under the low and high alternatives, the number of classroom teachers is projected to range between 3.27 million and 3.48 million by the year 2005. For the low alternative, this will be an average annual growth rate of 1.1 percent. For the high alternative, this will be a growth rate of 1.6 percent.

Classroom Teachers, by Organizational Level

While elementary enrollment decreased from 1980 to 1983, the number of elementary teachers rose slightly, from 1.40 million in 1980 to 1.43 million in 1983 (figure 45). Then, the number continued to increase to about 1.77 million in 1993, an increase of 27 percent from 1980. Under the middle alternative, the number of elementary teachers is projected to increase to 1.98 million by 2005, an increase of 12 percent from 1993; this increase represents an average annual growth rate of 0.9 percent per year. During the projection period, the growth rate in the 1993–

99 period will be 1.3 percent, while the growth rate in the 1999–2005 period will be 0.6 percent (figure 46). Under the low and high alternatives, elementary teachers are projected to range between 1.92 million and 2.05 million by the year 2005. For the low alternative, this will be an average annual growth rate of 0.7 percent. For the high alternative, this will be a growth rate of 1.2 percent.

The number of secondary classroom teachers decreased from 1.08 million in 1980 to 1.04 million in 1981. Then, the number of secondary classroom teachers increased to about 1.10 million in 1993, an increase of 6 percent from 1981. This increase in the number of secondary teachers occurred even though secondary enrollment decreased for most years between 1981 and 1990. Under the middle alternative, the number of secondary teachers is projected to increase from 1.10 million in 1993 to 1.39 million by the year 2005, resulting in an increase of 26 percent. This increase will represent an average annual growth rate of 2.0 percent over the projection period. During the projection period, the growth rate in the 1993–99 period will be 2.5 percent, while the growth rate in the 1999–2005 period will be 1.4 percent. Under the low and high alternatives, secondary teachers are projected to range between 1.35 million and 1.43 million by the year 2005. For the low alternative, this will be an average annual growth rate of 1.7 percent. For the high alternative, this will be a growth rate of 2.2 percent.

Classroom Teachers, by Control of School

The number of classroom teachers in public elementary and secondary schools decreased from 2.18 million in 1980 to 2.13 million in 1981. Then, the number of public school teachers increased to about 2.51 million in 1993, an increase of 18 percent from 1981 (figure 47). Under the middle alternative, the number of public school teachers is projected to increase to 2.95 million by the year 2005, resulting in an increase of 18 percent from 1993. This increase will represent an average annual growth rate of 1.4 percent. During the projection period, the growth rate in the 1993–99 period will be 1.8 percent, while the growth rate in the 1999–2005 period will be 0.9 percent (figure 48). Under the low and high alternatives, public school teachers are projected to range between 2.86 million and 3.04 million by the year 2005. For the low alternative, this will be an average annual growth rate of 1.1 percent. For the high alternative, this will be a growth rate of 1.6 percent.

The number of classroom teachers in private elementary and secondary schools was an estimated 366,000 in 1993. This number is projected to increase to 424,000 by the year 2005, an increase of 16 percent from 1993. This increase will represent an average annual growth rate of 1.2 percent. During the projection period, the growth rate in the 1993–99 period will be 1.6 percent, while the growth rate in the 1999–2005 period will be 0.9 percent. Under the low and high alternatives, private school teachers are projected to range between 412,000 and 438,000 by the year 2005. For the low alternative, this will be an average annual growth rate of 1.0 percent. For the high alternative, this will be a growth rate of 1.5 percent.

Pupil-Teacher Ratios

A broad relationship between the number of pupils and teachers can be described by the pupil-teacher ratio. The pupil-teacher ratios were computed based on elementary and secondary enrollment by organizational level and the number of classroom teachers by organizational level.

The pupil-teacher ratio in elementary schools decreased from 20.1 in 1980 to 18.4 in 1989 (table 33 and figure 49). Then, the pupil-teacher ratio increased to 18.5 in 1990 and held steady through 1992. Next, it declined to 18.4 in 1993. Under the middle alternative, this ratio is projected to increase to 18.9 in 1994, before declining to 18.0 by the year 2005. Under the low and high alternatives, the pupil-teacher ratio in elementary schools is expected to range between 17.4 and 18.6 by the year 2005.

For public elementary schools, under the middle alternative, the pupil-teacher ratio is projected to increase from 18.7 in 1993 to 19.2 in 1994 and then decline to 18.3 by the year 2005 (figure 50). Under the low and high alternatives, the pupil-teacher ratio in public elementary schools is projected to range between 17.7 and 18.9 by the year 2005. For private elementary schools, under the middle alternative, the pupil-teacher ratio is projected to increase from 16.3 in 1993 to 16.8 in 1994 and then decline to 16.1 by the year 2005. Under the low and high alternatives, the pupil-teacher ratio in private elementary schools is expected to range between 15.6 and 16.6 by the year 2005.

For secondary schools, the pupil-teacher ratio decreased from 16.6 in 1980 to 14.3 in 1990. Then, it increased to about 14.8 in 1993. Under the middle alternative, this ratio is projected to decrease to 14.5 in 2005. Under the low and high alternatives, the pupil-teacher ratio in secondary schools is projected to range between 14.1 and 14.9 by the year 2005.

For public secondary schools, under the middle alternative, the pupil-teacher ratio is projected to decrease from 15.1 in 1993 to 14.9 by 2005. Under the low and high alternatives, the pupil-teacher ratio in public secondary schools is expected to range between 14.4 and 15.3 by the year 2005. For private secondary schools, under the middle alternative, the pupil-teacher ratio is projected to decrease from 11.5 in 1993 to 11.3 by the year 2005. Under the low and high alternatives, the pupil-teacher ratio in private secondary schools is projected to range between 11.0 and 11.6 by the year 2005.

Although private school classroom teachers represented 13 percent of total classroom teachers in 1993, private school enrollment was 11 percent of total enrollment. This indicates that private schools have more teachers for a given number of students than do public schools; that is, private school pupil-teacher ratios are smaller than public school pupil-teacher ratios.

Figure 43
Elementary and secondary classroom teachers, with alternative projections: Fall 1980 to fall 2005

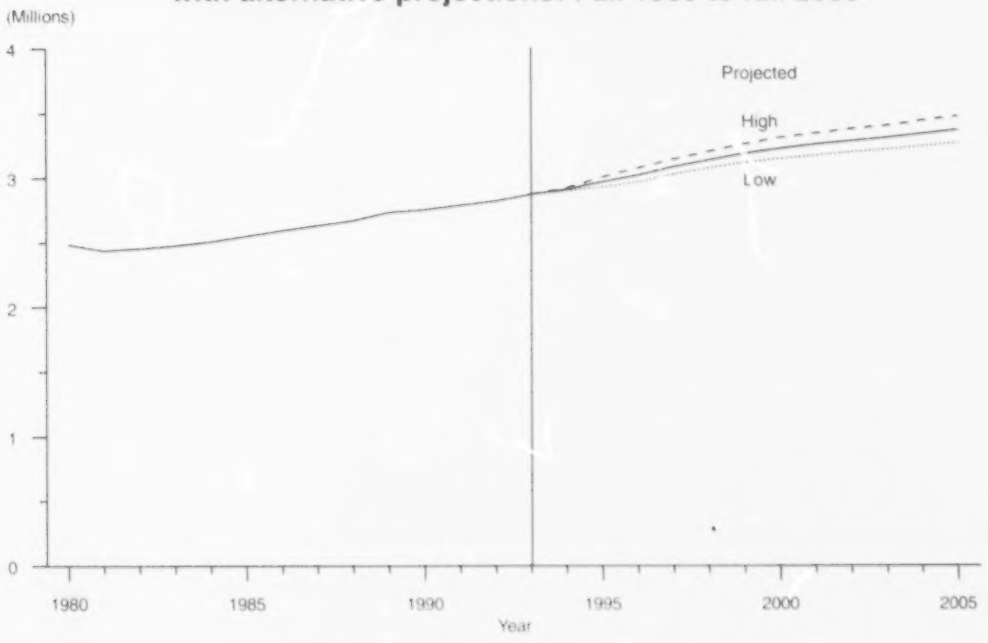

Figure 44
Average annual growth rates for classroom teachers

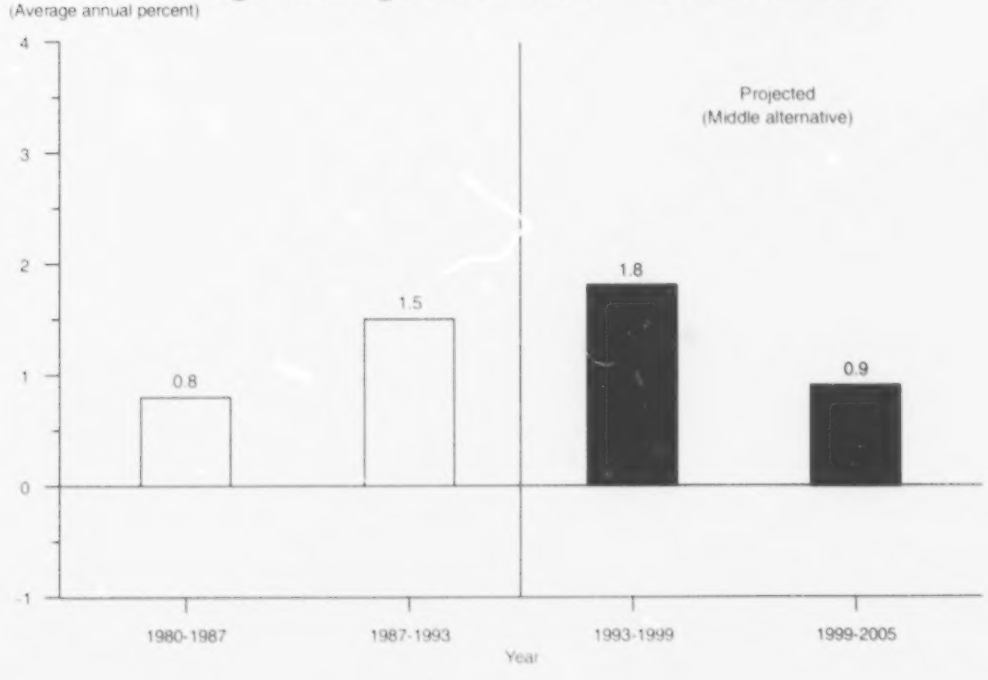

Figure 45
Elementary and secondary classroom teachers, by organizational level, with middle alternative projections: Fall 1980 to fall 2005

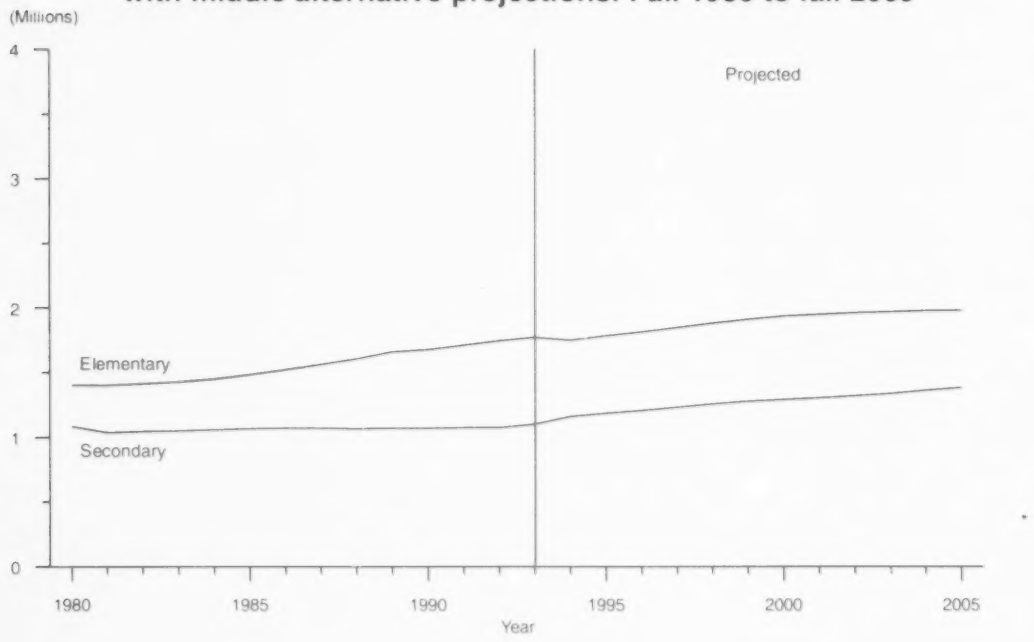

Figure 46
Average annual rates of change for classroom teachers, by organizational level

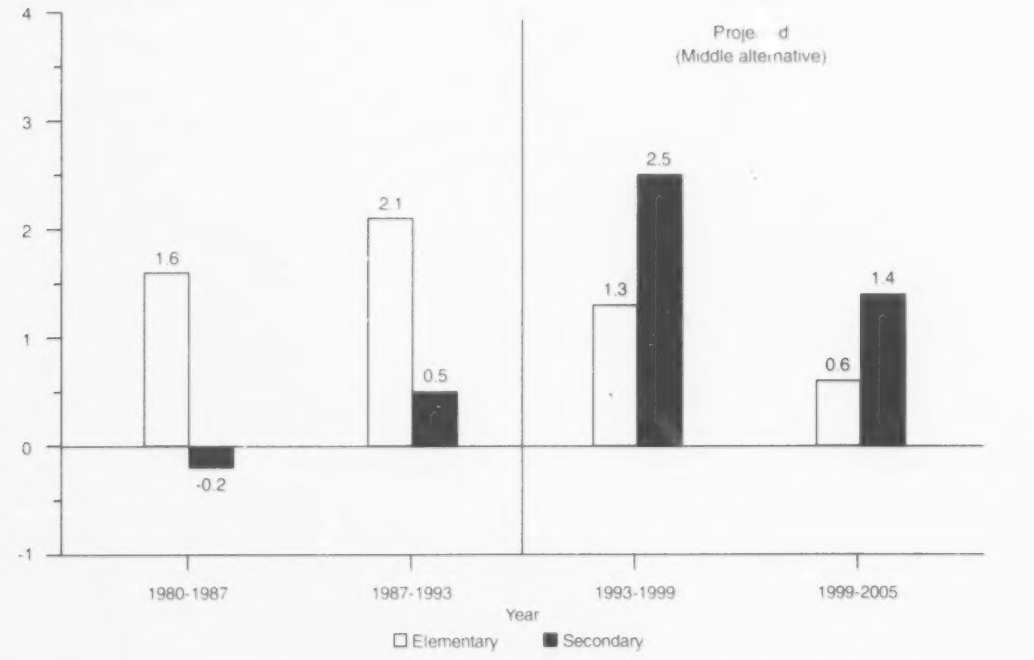

Figure 47
Elementary and secondary classroom teachers, by control of institution, with middle alternative projections: Fall 1980 to fall 2005

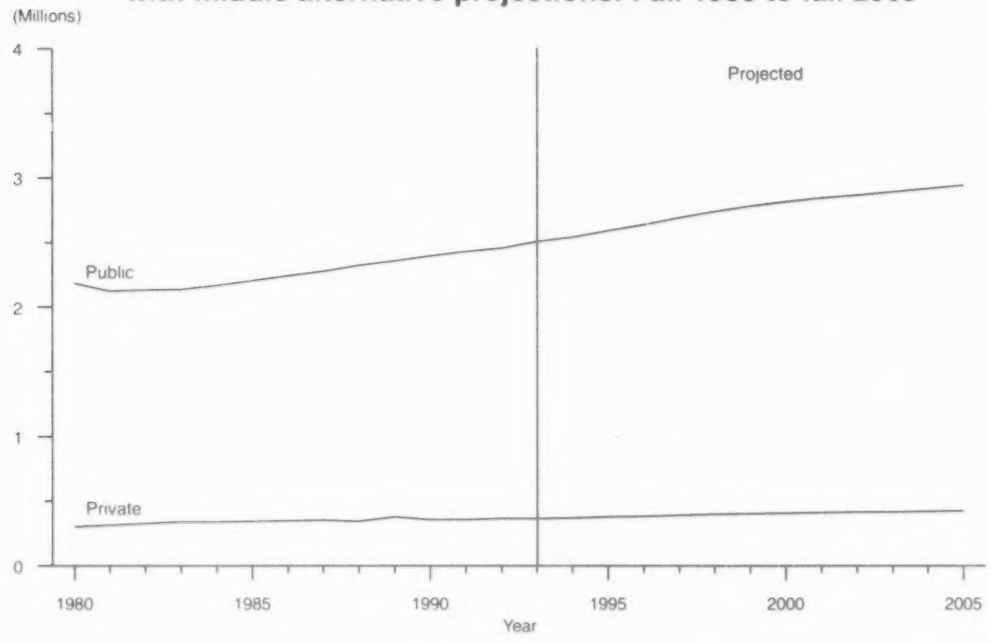

Figure 48
Average annual growth rates for classroom teachers, by control of institution

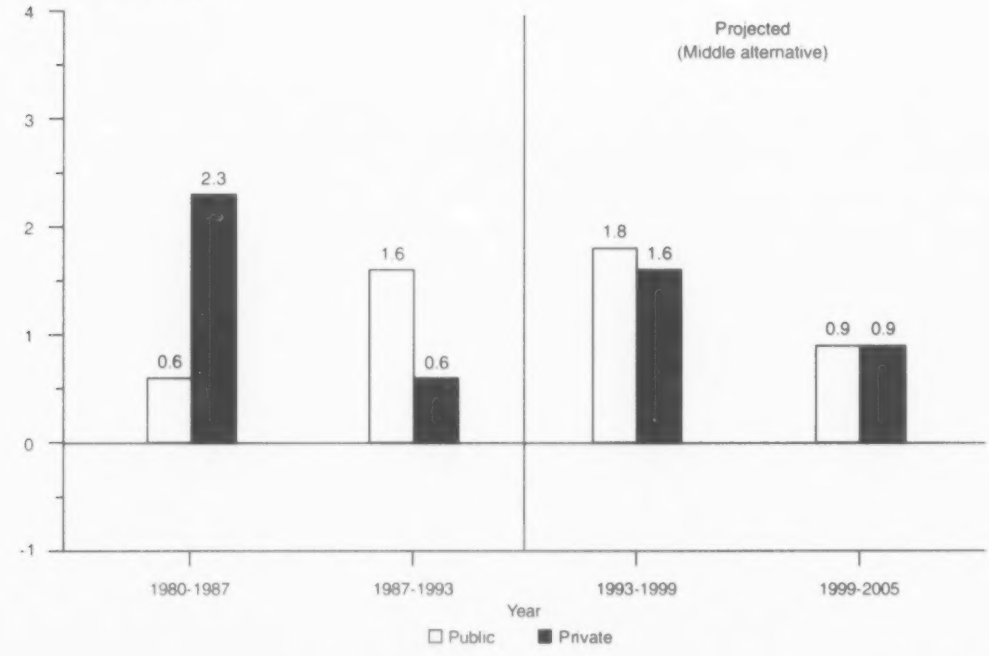

Figure 49
Pupil-teacher ratios, by organizational level, with middle alternative projections: Fall 1980 to fall 2005

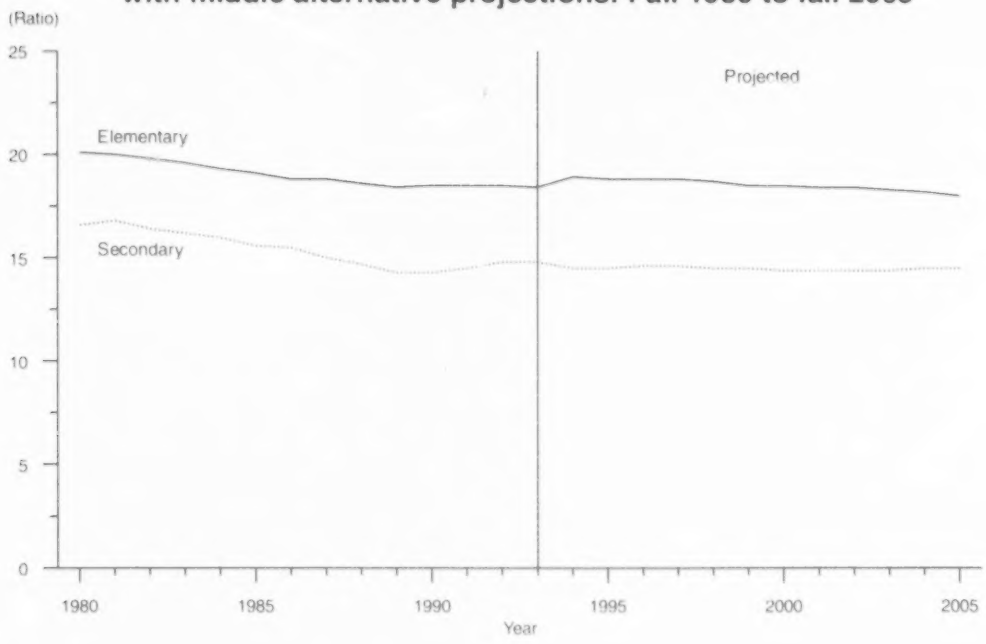

Figure 50
Pupil-teacher ratios, by organizational level and control, with middle alternative projections: Fall 1980 to fall 2005

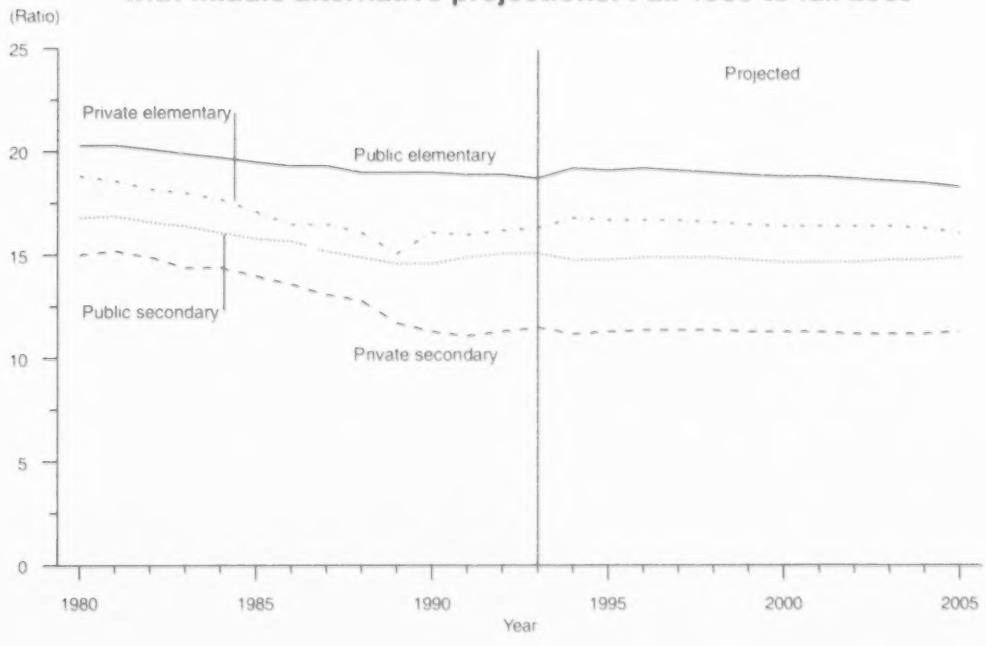

Table 32.—Classroom teachers in elementary and secondary schools, by control of institution and organizational level, with alternative projections: 50 States and D.C., fall 1980 to fall 2005

(In thousands)

Year	Total			Public			Private		
	K–12	Elementary	Secondary	K–12	Elementary	Secondary	K–12	Elementary	Secondary
1980	2,485	1,401	1,084	2,184	1,189	995	301	212	89
1981	2,440	1,404	1,037	2,127	1,183	945	313	221	92
1982	2,458	1,413	1,045	2,133	1,182	951	325	231	94
1983	2,476	1,426	1,050	2,139	1,186	953	337	240	97
1984	2,508	1,451	1,057	2,168	1,208	960	340	243	97
1985	2,549	1,483	1,066	2,206	1,237	969	343	246	97
1986	2,592	1,521	1,071	2,244	1,271	973	348	250	98
1987	2,632	1,564	1,068	2,279	1,307	973	353	257	95
1988	2,668	1,604	1,064	2,323	1,353	970	345	251	94
1989	2,734	1,662	1,072	2,357	1,387	970	377	275	102
1990	2,753	1,680	1,073	2,398	1,426	972	355	254	101
1991	2,787	1,713	1,074	2,432	1,459	973	355	254	101
1992	2,821	1,746	1,075	2,458	1,486	972	363	260	103
1993	2,873	1,773	1,100	[2]2,507	1,511	996	[3]366	262	104
Middle alternative projections									
1994	2,912	1,751	1,161	2,543	1,492	1,051	368	259	110
1995	2,971	1,783	1,187	2,595	1,520	1,075	376	264	112
1996	3,021	1,813	1,208	2,639	1,545	1,094	382	268	114
1997	3,084	1,850	1,234	2,694	1,576	1,118	390	273	117
1998	3,138	1,883	1,256	2,741	1,605	1,137	397	278	119
1999	3,189	1,912	1,277	2,786	1,630	1,156	403	283	121
2000	3,228	1,936	1,292	2,820	1,650	1,170	408	286	122
2001	3,259	1,953	1,306	2,847	1,664	1,183	412	289	124
2002	3,286	1,964	1,322	2,871	1,674	1,197	415	290	125
2003	3,312	1,972	1,340	2,894	1,681	1,213	418	291	127
2004	3,343	1,979	1,364	2,921	1,687	1,235	421	292	129
2005	3,371	1,984	1,387	2,947	1,691	1,255	424	293	131
Low alternative projections									
1994	2,905	1,747	1,158	2,537	1,489	1,049	368	258	109
1995	2,935	1,761	1,174	2,564	1,501	1,063	371	260	111
1996	2,973	1,781	1,191	2,597	1,518	1,079	376	263	113
1997	3,030	1,814	1,216	2,647	1,546	1,101	383	268	115
1998	3,076	1,842	1,235	2,687	1,570	1,118	389	272	117
1999	3,119	1,867	1,252	2,725	1,591	1,134	394	276	118
2000	3,150	1,887	1,263	2,752	1,608	1,144	398	279	119
2001	3,175	1,900	1,275	2,774	1,619	1,154	401	281	121
2002	3,199	1,910	1,289	2,795	1,628	1,167	404	282	122
2003	3,222	1,916	1,306	2,816	1,633	1,183	407	283	123
2004	3,249	1,921	1,328	2,840	1,637	1,202	409	284	126
2005	3,274	1,924	1,350	2,862	1,640	1,222	412	284	128
High alternative projections									
1994	2,918	1,755	1,163	2,549	1,496	1,053	369	259	110
1995	3,009	1,807	1,20	2,628	1,540	1,088	381	267	114
1996	3,076	1,848	1,228	2,687	1,575	1,112	389	273	116
1997	3,144	1,890	1,255	2,747	1,610	1,136	398	279	119
1998	3,204	1,926	1,278	2,798	1,641	1,157	405	285	121
1999	3,262	1,958	1,303	2,849	1,669	1,180	413	289	123
2000	3,311	1,988	1,323	2,892	1,694	1,198	419	294	125
2001	3,347	2,008	1,339	2,924	1,711	1,212	423	297	127
2002	3,378	2,022	1,356	2,951	1,723	1,228	427	299	128
2003	3,407	2,032	1,375	2,977	1,731	1,245	430	300	130
2004	3,443	2,042	1,401	3,009	1,740	1,269	434	302	132
2005	3,476	2,050	1,426	3,039	1,747	1,291	438	303	135

[1] Estimated on the basis of past data.
[2] Estimate.
[3] Projected.

NOTE: The numbers of elementary and secondary teachers reported separately by the National Education Association were prorated to the NCES totals for each year. Projections are based on data through 1992. Because of rounding, details may not add to totals.

SOURCE: U.S. Department of Education, National Center for Education Statistics, *Statistics of Public Elementary and Secondary Schools*; Common Core of Data surveys; "Private Elementary and Secondary Education, 1983: Enrollment, Teachers, and Schools," *NCES Bulletin*, December 1984; 1985 Private School Survey; "Key Statistics for Private Elementary and Secondary Education: School Year 1988–89," *Early Estimates*; "Key Statistics for Private Elementary and Secondary Education: School Year 1990–91," *Early Estimates*; Public and Private Elementary and Secondary Education Statistics: School Year 1991–92," *Early Estimates*; "Public and Private Elementary and Secondary Education Statistics: School Year 1992–93," *Early Estimates*; and "Public Elementary and Secondary Education Statistics: School Year 1993–94," *Early Estimates*. (This table was prepared July 1994.)

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Table 33.—Pupil-teacher ratios in elementary and secondary schools, by control of institution and organizational level, with alternative projections: 50 States and D.C., fall 1980 to fall 2005

Year	Total		Public		Private	
	Elementary	Secondary	Elementary	Secondary	Elementary	Secondary
1980	20.1	16.6	20.3	16.8	18.8	15.0
1981	20.0	16.8	20.3	16.9	[1]18.6	[1]15.2
1982	19.8	16.4	20.2	16.6	[1]18.2	[1]14.9
1983	19.6	16.2	19.9	16.4	18.0	14.4
1984	19.3	16.0	19.7	16.1	[1]17.7	[1]14.4
1985	19.1	15.6	19.5	15.8	17.1	14.0
1986	18.8	15.5	19.3	15.7	[1]16.5	[1]13.6
1987	18.8	15.0	19.3	15.2	[2]16.4	[2]13.1
1988	18.6	14.7	19.0	14.9	[2]16.1	[2]12.8
1989	18.4	14.3	19.0	14.6	[2]15.1	[2]11.7
1990	18.5	14.3	19.0	14.6	[2]16.1	[2]11.3
1991	18.5	14.5	18.9	14.9	[2]16.0	[2]11.1
1992	18.5	14.7	18.9	15.1	[2]16.2	[2]11.3
1993	18.4	14.8	[2]18.7	[2]15.1	[3]16.3	[3]11.5
Middle alternative projections						
1994	18.9	14.5	19.2	14.8	16.8	11.2
1995	18.8	14.5	19.1	14.8	16.7	11.3
1996	18.8	14.6	19.2	14.9	16.7	11.4
1997	18.8	14.6	19.1	14.9	16.7	11.4
1998	18.7	14.5	19.0	14.9	16.6	11.4
1999	18.5	14.5	18.9	14.8	16.5	11.3
2000	18.5	14.4	18.8	14.7	16.4	11.3
2001	18.4	14.4	18.8	14.7	16.4	11.3
2002	18.4	14.4	18.7	14.7	16.4	11.2
2003	18.3	14.4	18.6	14.8	16.4	11.2
2004	18.2	14.5	18.5	14.8	16.3	11.2
2005	18.0	14.5	18.3	14.9	16.1	11.3
Low alternative projections (Based on high alternative projections of teachers)						
1994	18.8	14.4	19.2	14.8	16.8	11.2
1995	18.5	14.3	18.9	14.7	16.5	11.1
1996	18.5	14.4	18.8	14.7	16.4	11.2
1997	18.4	14.3	18.7	14.7	16.3	11.2
1998	18.2	14.3	18.6	14.6	16.2	11.2
1999	18.1	14.2	18.5	14.5	16.1	11.1
2000	18.0	14.1	18.3	14.4	16.0	11.0
2001	17.9	14.0	18.3	14.4	15.9	11.0
2002	17.9	14.0	18.2	14.4	15.9	11.0
2003	17.8	14.0	18.1	14.4	15.9	10.9
2004	17.6	14.1	17.9	14.4	15.8	10.9
2005	17.4	14.1	17.7	14.4	15.6	11.0
High alternative projections (Based on low alternative projections of teachers)						
1994	18.9	14.5	19.3	14.8	16.8	11.2
1995	19.0	14.7	19.4	15.0	16.9	11.4
1996	19.1	14.8	19.5	15.1	17.0	11.6
1997	19.1	14.8	19.5	15.1	17.0	11.6
1998	19.1	14.8	19.4	15.1	17.0	11.6
1999	19.0	14.8	19.4	15.1	16.9	11.6
2000	19.0	14.7	19.3	15.1	16.9	11.5
2001	18.9	14.7	19.3	15.1	16.8	11.6
2002	18.9	14.8	19.3	15.1	16.8	11.5
2003	18.8	14.8	19.2	15.1	16.8	11.5
2004	18.7	14.8	19.1	15.2	16.8	11.5
2005	18.6	14.9	18.9	15.3	16.6	11.6

[1] Estimated on the basis of past data.
[2] Estimate.
[3] Projected.

NOTE: The pupil-teachers ratios were derived from tables 2 and 32. Some data have been revised from previously published figures. Projections are based on data through 1992.

SOURCE: U.S. Department of Education, National Center for Education Statistics, *Statistics of Public Elementary and Secondary Schools*; Common Core of Data surveys; "Private Elementary and Secondary Education, 1983: Enrollment, Teachers, and Schools," *NCES Bulletin*, December 1984; 1985 Private School Survey; "Key Statistics for Private Elementary and Secondary Education: School Year 1988–89," *Early Estimates*; "Key Statistics for Private Elementary and Secondary Education: School Year 1990–91," *Early Estimates*; Public and Private Elementary and Secondary Education Statistics: School Year 1991–92," *Early Estimates*; "Public and Private Elementary and Secondary Education Statistics: School Year 1992–93," *Early Estimates*; and "Public Elementary and Secondary Education Statistics: School Year 1993–94," *Early Estimates*. (This table was prepared July 1994.)

Chapter 6

Expenditures of Public Elementary and Secondary Schools

Current expenditures are projected to increase by 38.6 percent in real dollars and average annual teacher salaries in public elementary and secondary schools are projected to increase by 11.6 percent between school years 1991–92 and 2004–2005 (also in real dollars) in the middle set of projections presented in this chapter. These projections are based on assumptions concerning economic growth and assistance by state governments to local governments; these assumptions are discussed in this chapter. Other sets of projections, based on alternative economic scenarios, are also discussed. No projections for private schools are presented as there are no regular data collections for private school expenditures.

Current Expenditures

Past Trends

Current expenditures increased from $159.8 billion in 1979–80 to $217.8 billion in 1991–92 using constant 1992–93 dollars (table 34 and figure 51). (The 1991–92 school year is the last year for which current expenditures is available.) This was an increase of 36.3 percent. Current expenditures are estimated to increase to $227.0 billion by 1993–94, an increase of 42.1 percent since 1979–80. From 1979–80 to 1991–92, current expenditures per pupil in average daily attendance rose 33.9 percent to $5,589 (table 34 and figures 52 and 53). Current expenditures per pupil in average daily attendance increased an estimated 34.9 percent from 1979–80 to 1993–94. Current expenditures per pupil in fall enrollment (table 35) increased 35.0 percent from 1979–80 to 1991–92.

Historically, education expenditures have followed a path similar to general economic trends. For much of the period since 1979–80, the economy has been rising. Current expenditures have also been rising during that period. (See figure 54 for a comparison of the growth rates of current expenditures per pupil and one major indicator of the state of the economy, disposable income per capita.)

The amount that local governments spend on education is also historically associated with the amount of state education aid to local governments. There was also a rapid rise in state education aid to local governments during the period from 1979–80 to 1991–92. (See figure 55 for a comparison of the growth rates of current expenditures per pupil and revenue receipts from state sources per capita).

The only time recently in which current expenditures decreased was from 1977–78 to 1981–82. The following three events may account for part of that decline. First, disposable income per capita and state education aid per capita were in periods of either slow growth or decline at that time. Second, this was the period of the "tax revolt," when many voters expressed their displeasure at the spending habits of state or local governments by voting for measures that would limit taxes or spending. It was also a period of high inflation, when state and local governments may have had difficulty anticipating the rapid rise in school costs.

Current expenditures have increased each year since 1981–82. The percent increase has not been constant over that time however. Most of the largest of the percent increases occurred from 1984–85 to 1988–89. That was the period when disposable income per capita and state education aid per capita were also increasing most rapidly. Since 1988–89, current expenditures have not been increasing as rapidly. Disposable income per capita and state education aid per capita have been increasing at lower rates than in the mid-1980s as well.

The percentage of total disposable income spent on public elementary and secondary school current expenditures has increased slightly from 1979–80 (4.7 percent) to 1991–92 (4.9 percent). This percentage was not stable during this period however. It fell to 4.3 percent in 1983–84 before beginning to rise again. The year 1983–84 is notable because enrollment as measured by average daily attendance reached its lowest level since 1962–63 and has been increasing annually since then.

Current expenditures per pupil as a percentage of disposable income per capita rose from 27.5 percent in 1979–80 to 31.5 percent in 1991–92.

Alternative Projections

The level of spending on elementary and secondary education has followed a path similar to the economic climate of the nation and the amount of revenue receipts provided by state governments to local governments for education. Regression equations were used to develop the forecasts for current expenditures, with a measure of the state of the economy (disposable income per capita) and the amount of revenue receipts from state sources for

education used as two factors associated with current expenditures. Several plausible growth paths for disposable income per capita and revenue receipts from state sources were used to produce alternative sets of projections for current expenditures. Hence, the forecasts for current expenditures depend on the forecasts for these inputs. Another important factor is that the relationships that have existed among the variables in the past continue throughout the projection period.

Three sets of projections are presented for current expenditures in this chapter. These sets of forecasts are based on alternative projections for disposable income per capita and local government revenue receipts from state sources per capita. The U.S. Quarterly Model of the economic consulting firm DRI/McGraw-Hill (DRI) was used in developing forecasts of both disposable income per capita and revenue receipts from state sources. The assumptions underlying each set of alternative projections for current expenditures are described briefly. For more information about these assumptions and about the methodology used to compute these forecasts, see appendix A5. The values of disposable income per capita and local government revenue receipts from state sources per capita are shown in Appendix B.

The middle alternative projections are based on the assumptions that disposable income per capita will increase at rates between 0.6 percent and 1.7 percent during the period from 1994–95 to 2004–2005 and that revenue receipts from state sources per capita will increase at rates between 0.7 percent and 2.2 percent.

The low alternative projections are based on the assumptions that disposable income per capita will change at rates between -0.4 percent and 1.4 percent and that revenue receipts from state sources per capita will increase at rates between 0.5 percent and 1.8 percent.

The high alternative projections are based on the assumptions that disposable income will increase at rates between 0.7 percent and 4.0 percent and that revenue receipts from state sources will increase at rates between 0.8 percent and 4.3 percent.

A third factor influencing the growth in current expenditures in these projections is the ratio of enrollment (as measured by average daily attendance) to the population. The same projections for enrollment and the population are used in the production of all sets of projections for current expenditures presented in this chapter.

Enrollments are projected to increase steadily during the forecast period. With enrollments rising, communities should have less money to spend per pupil than if enrollments had remained unchanged. However, this expected increase in enrollment should also have a strong positive effect on total expenditures. With enrollments expected to rise, total expenditures should grow at a higher rate than expenditures per pupil.

The projections in this chapter are presented in both constant 1992–93 dollars and in current dollars. The projections were developed in constant dollars and then placed in current dollars using projections for the Consumer Price Index (CPI). Three alternative sets of projections for the CPI were developed, one for each of the alternative sets of projections for current expenditures. These three alternative sets of projections for the CPI were developed simultaneously with the alternative sets of projections for disposable income per capita using the U.S. Quarterly Model. Since the set of projections for the CPI developed for use with the low alternative projections is rising at the fastest rate and that developed for use with the high alternative projections is rising at the slowest rate, it will frequently be the case that the current dollar projections from the low alternative set of projections are higher than those from the other two alternative sets of projections.

In the middle alternative projections, current expenditures in constant 1992–93 dollars are projected to increase steadily throughout the forecast period, reaching $301.9 billion in 2004–2005. This is an increase of 38.6 percent over the 1991–92 level, and a 33.0 percent over the estimated level for 1993–94. Current expenditures are projected to increase most rapidly during the period from 1994–95 to 1998–99. This is also the period during which enrollments are increasing most rapidly.

Current expenditures per pupil in average daily attendance are projected to increase by 17.7 percent to $6,576 from 1991–92 to 2004–2005 (table 34 and figures 51 and 51).

In the middle alternative projection, total current expenditures as a percentage of total disposable income are projected to increase from 4.9 percent in 1991–92 to 5.1 percent in 2004–2005. One cause of this projected increase is the 17.8 percent increase in enrollment projected for this period.

Current expenditures per pupil as a percentage of disposable income per capita are also projected to increase, from 31.5 percent to 32.0 percent. This increase is smaller than that which occurred from 1979–80 to 1991–92. The rapid increase projected for enrollment compared with the increase projected for the population (17.8 percent for enrollment, 13.3 percent for the population) is one cause of this relatively small increase.

In the low alternative projections, both disposable income per capita and revenue receipts from state sources are projected to increase more slowly than in the middle set of projections. As a result, both current expenditures and current expenditures per pupil are projected to increase more slowly than in the middle set of projections. Current expenditures per pupil in average daily attendance are projected to increase by only 0.8 percent from 1989–90 to 1995–96. After that, current expenditures per pupil are projected to increase more rapidly, reaching $6,209 by 2004–2005. Current expenditures are projected to increase by 30.9 percent from 1991–92 to 2004–2005, reaching $285.0 billion at the end of the forecast period.

In current dollars, current expenditures are projected to reach $335.2 billion dollars in 1998–99 using the low alternative projections. This is greater than the amount projected for 1998–99 using the middle set of alternative projections. This happens because the set of projections for the Consumer Price Index (CPI) used to place the low set of projections for current expenditures into current

dollars is rising at a faster rate than the set of CPI projections used to place the middle set of projections for current expenditures into current dollars.

In the high alternative projections, both disposable income per capita and revenue receipts from state sources per capita are projected to increase more rapidly than in the middle set of projections. Current expenditures are projected to increase by approximately 47.3 percent to $320.8 billion in 2004–2005. Current expenditures per pupil in average daily attendance are projected to increase by 25.0 percent to $6,989.

When examined in current dollars, the current expenditures projections for 1998–99 from the high alternative projections are less than those from the low alternative projections because the 1998–99 projection for the CPI is so much lower for the high alternative set of projections for current expenditures.

Teacher Salaries

Past Trends

The period from 1979–80 to 1993–94 has been dominated by three different patterns for teacher salaries in constant dollars (table 36 and figures 56 and 57).

Teacher salaries, which had been declining since 1976-77, fell 1.0 percent from 1979–80 to 1980–81, from $29,335 to $29,040 (average annual salary) in constant 1992–93 dollars. The declines in enrollments had been particularly large during the period from 1976–77 to 1980–81. (See figure 58 for a comparison of the growth rates for teacher salaries and average daily attendance.)

After this period of decline, teacher salaries entered a period of steady and relatively rapid growth. From 1980–81 to 1989–90, teacher salaries increased 21.2 percent, from $29,040 to $35,207. During this period, current expenditures and the revenues of state governments were increasing rapidly. (See figure 59 for a comparison of the growth rates for teacher salaries and current expenditures per pupil.) It was during that period when enrollment, which had also been in a period of steady decline, began increasing again.

From 1989–90 to 1993–94, teacher salaries declined 0.5 percent. (Unlike current expenditures, there are values for teacher salaries for 1992–93 and 1993–94.) During much of that period, the economy, current expenditures, and revenues of state and local governments have not been increasing as rapidly as earlier.

In the 1970s, the number of people preparing to become teachers was much greater than the number of openings for newly qualified teachers. The drop in teacher salaries during this time may be attributed, in part, to excess supply. Then the number of people preparing to become teachers dropped, and eventually, the decline in teacher salaries stopped. Some of the increase in teacher salaries that occurred during the 1980s may be a result of the reforms enacted to encourage more people to enter the teaching profession.

Alternative Projections

As with current expenditures, a multiple linear regression model was developed for teacher salaries. Teacher salaries are seen as being related to current expenditures and enrollments. (See appendix A5.) Also like current expenditures, these projections depend on the projections of these inputs, and assume that the relationships that have existed among the variables in the past will continue throughout the projection period.

Three sets of alternative projections of teacher salaries—middle, low, and high—have been developed. Each alternative is based on one of the alternative sets of projections for current expenditures presented earlier in this chapter.

The projections for average daily attendance were produced by using the growth rates of the projections for fall enrollment presented in chapter 1. The same projections for average daily attendance were used for each of the three sets of projections for teacher salaries. Enrollments are projected to increase throughout the projection period, with the greatest percent increase occurring in the mid-1990s.

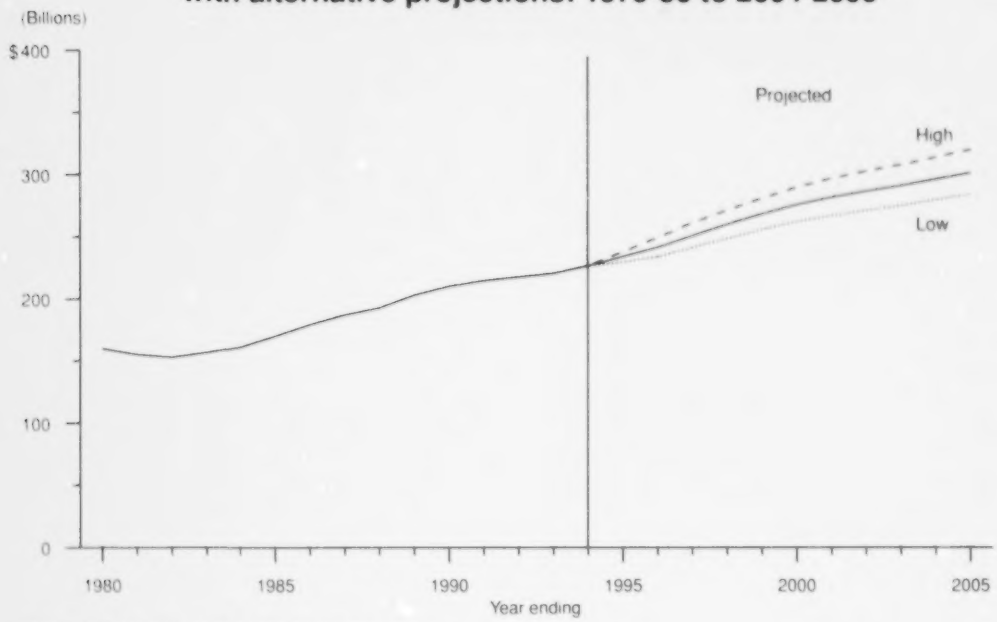
As with current expenditures, the three alternative sets of projections for the Consumer Price Index (CPI) developed using the U.S. Quarterly Model were used to place the constant dollar projections into current dollars. As the set of projections for the CPI developed for use with the low alternative projections is rising at the most rapid rate and that developed for use with the high alternative projections is rising at the slowest rate, in some years, the current dollar teacher salary projections from the low alternative set of projections are higher than those from the other two alternative sets of projections.

In the middle alternative projections, the average teacher salary in constant 1992–93 dollars is projected to reach $39,232 in 2004–2005 (table 36 and figure 56). This is a 12.0-percent increase from the level estimated for 1993–94.

In the low alternative projections, teacher salaries are projected to rise slowly throughout the projection period. The average salary is projected to reach $37,784 in 2004–2005, an increase of about 7.9 percent from 1993–94. (See figure 57 for a comparison of the growth rates for the alternative sets of projections.)

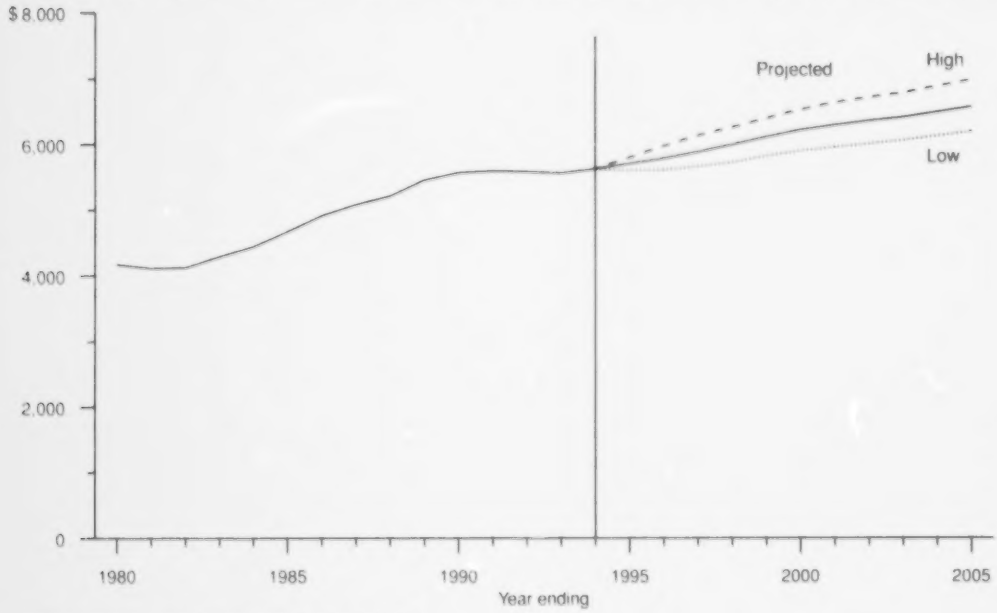
In the high alternative projections, the average teacher salary is projected to reach $40,850 in 2004–2005, an increase of about 16.7 percent.

Figure 51
Current expenditures of public schools (in constant 1992-93 dollars), with alternative projections: 1979-80 to 2004-2005



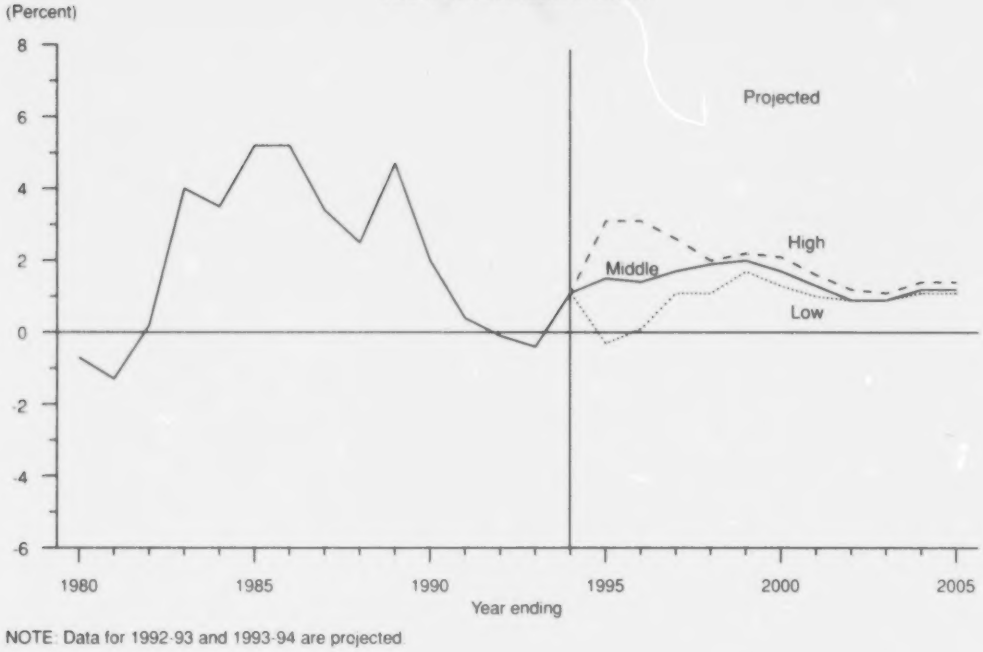
NOTE: Data for 1992-93 and 1993-94 are projected.

Figure 52
Current expenditures per pupil in average daily attendance (in constant 1992-93 dollars) of public schools, with alternative projections: 1979-80 to 2004-2005



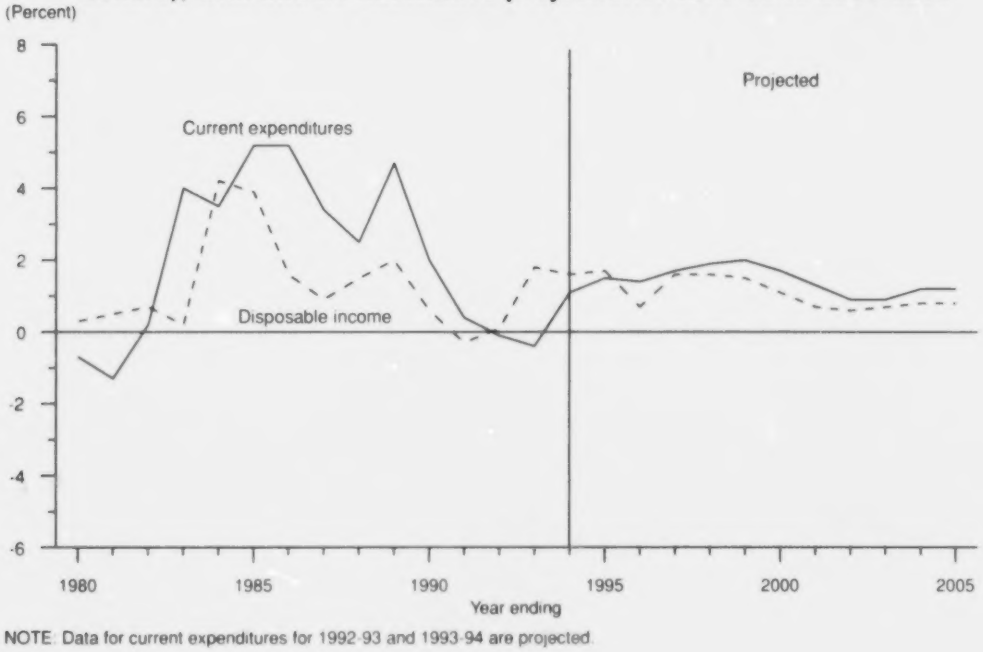
NOTE: Data for 1992-93 and 1993-94 are projected.

Figure 53
Percent change in current expenditures per pupil in average daily attendance (in constant dollars) of public schools, with alternative projections: 1979-80 to 2004-2005



NOTE: Data for 1992-93 and 1993-94 are projected.

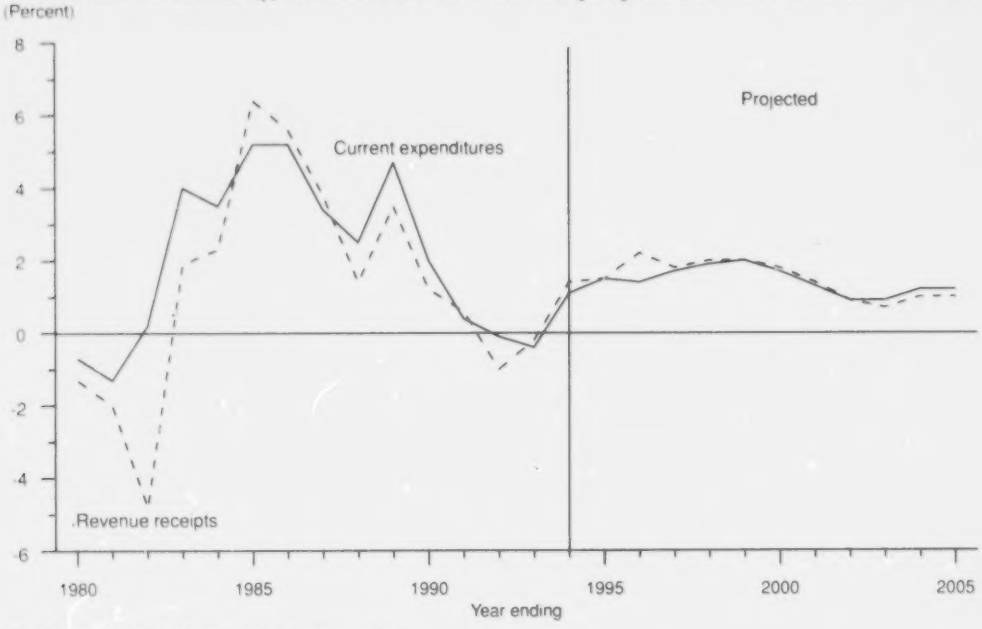
Figure 54
Percent change in current expenditures per pupil in average daily attendance of public schools and disposable income per capita (both in constant dollars), with middle alternative projections: 1979-80 to 2004-2005



NOTE: Data for current expenditures for 1992-93 and 1993-94 are projected.

Figure 55

Percent change in current expenditures per pupil in average daily attendance of public schools and education revenue receipts from state sources per capita (both in constant dollars), with middle alternative projections: 1979-80 to 2004-2005



NOTE: Data for 1992-93 and 1993-94 are projected.

Figure 56
Average annual salaries of teachers (in constant 1992-93 dollars) in public schools, with alternative projections: 1979-80 to 2004-2005

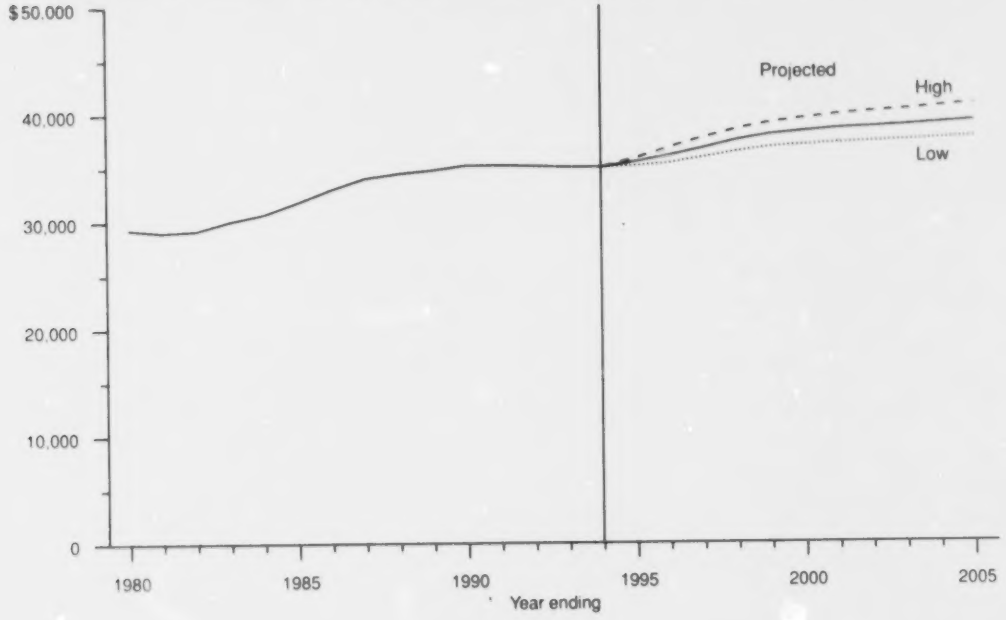


Figure 57
Percent change in average annual salaries of teachers (in constant dollars) in public schools, with alternative projections: 1979-80 to 2004-2005

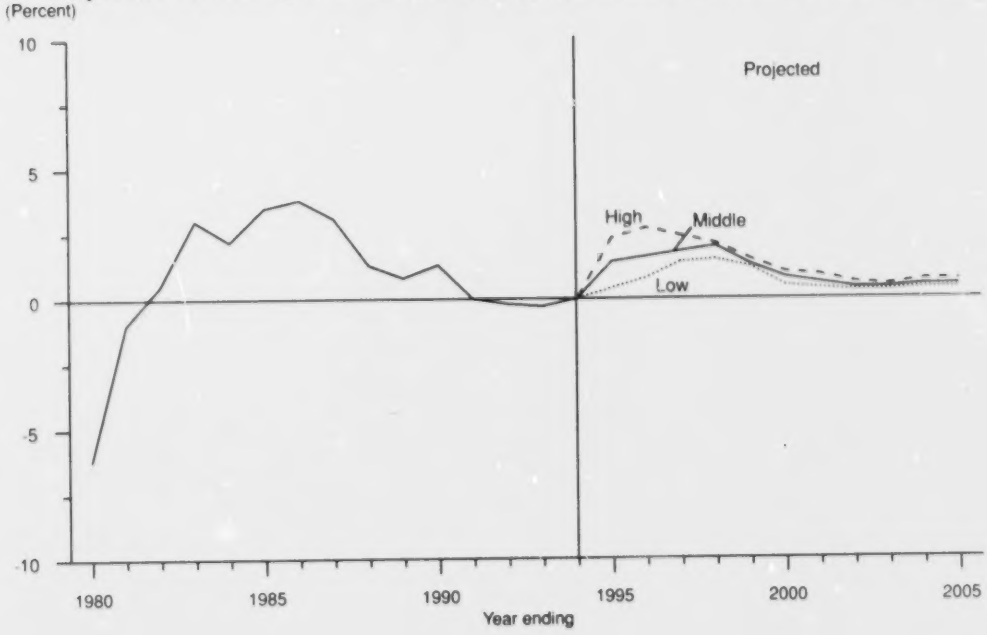


Figure 58
Percent change in average annual salaries of teachers (in constant dollars) in public schools and average daily attendance, with middle alternative projections: 1979-80 to 2004-2005

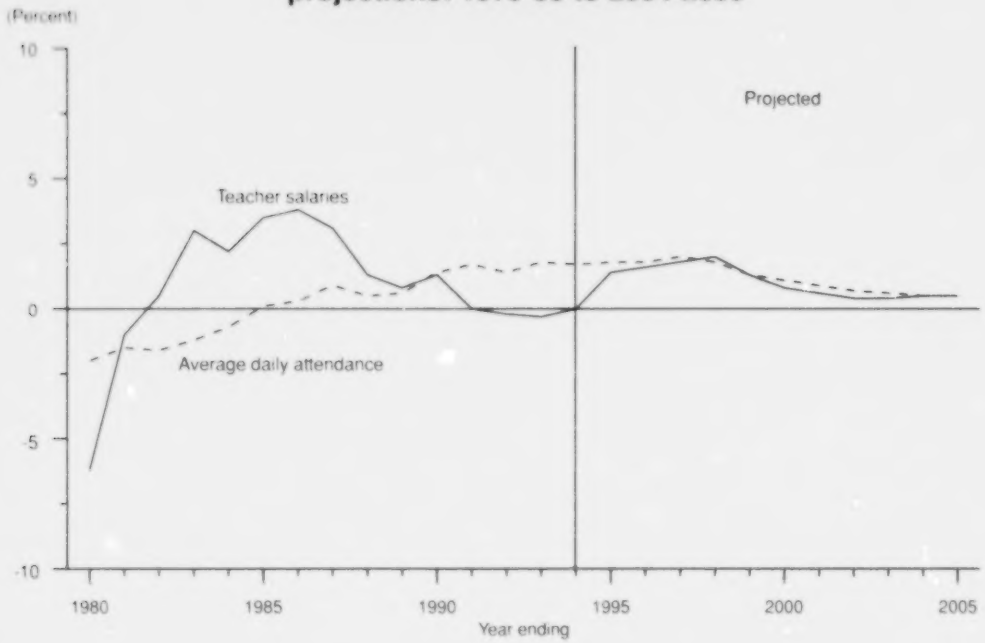
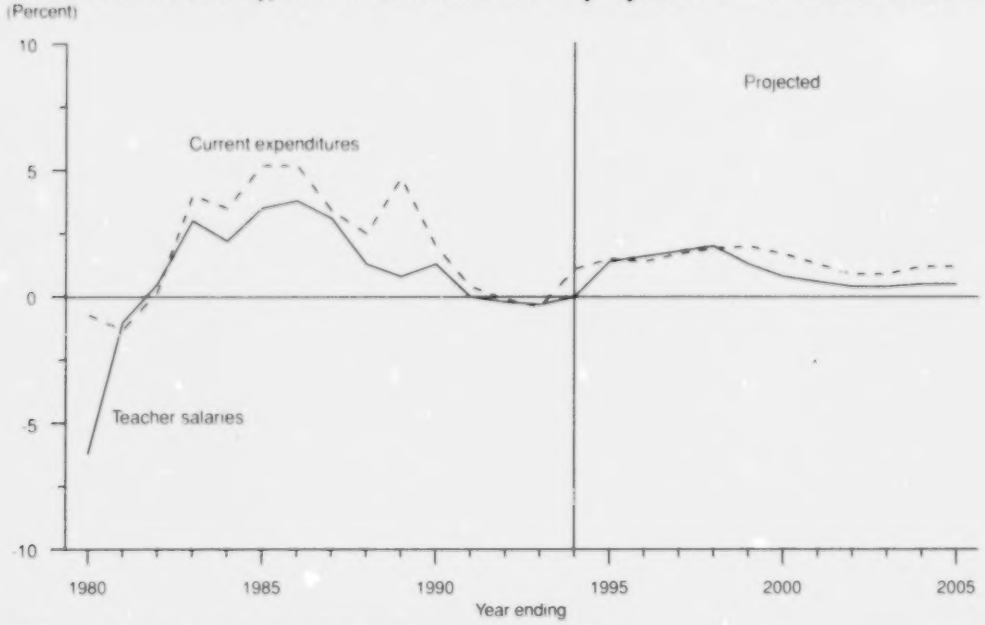


Figure 59
Percent change in average annual salaries of teachers in public schools, and current expenditures per pupil in average daily attendance of public schools (both in constant dollars), with middle alternative projections: 1979-80 to 2004-2005



NOTE: Data for current expenditures for 1992-93 and 1993-94 are projected.

Table 34.—Current expenditures and current expenditures per pupil in average daily attendance (ADA) in public elementary and secondary schools, with alternative projections: 50 States and D.C., 1979–80 to 2004–2005

Year ending	ADA (in thousands)	Current expenditures			
		Constant 1992–93 dollars [1]		Current dollars [2]	
		Total (in billions)	Per pupil in ADA	Total (in billions)	Per pupil in ADA
1980	38,289	159.8	$4,173	$87.0	$2,272
1981	37,704	155.2	4,117	94.3	2,502
1982	37,095	153.1	4,128	101.1	2,726
1983	36,636	157.2	4,292	108.3	2,955
1984	36,363	161.6	4,444	115.4	3,173
1985	36,404	170.3	4,677	126.3	3,470
1986	36,523	179.6	4,918	137.2	3,756
1987	36,864	187.5	5,086	146.4	3,970
1988	37,051	193.2	5,214	157.1	4,240
1989	37,268	203.4	5,458	173.0	4,641
1990	37,799	210.5	5,569	187.6	4,962
1991	38,427	214.9	5,594	202.0	5,258
1992	38,961	217.8	5,589	211.2	5,421
1993 [3]	39,663	220.8	5,566	220.8	5,566
1994 [3]	40,322	227.0	5,630	233.1	5,781
Middle alternative projections					
1995	41,049	234.5	5,712	248.5	6,053
1996	41,791	242.1	5,794	265.3	6,349
1997	42,648	251.2	5,891	284.8	6,678
1998	43,425	260.6	6,001	306.0	7,048
1999	43,986	269.1	6,118	327.6	7,449
2000	44,458	276.6	6,222	—	—
2001	44,841	282.5	6,301	—	—
2002	45,175	287.3	6,361	—	—
2003	45,462	291.8	6,419	—	—
2004	45,677	296.8	6,497	—	—
2005	45,905	301.9	6,576	—	—
Low alternative projections					
1995	41,049	230.4	5,612	246.1	5,994
1996	41,791	234.7	5,616	263.0	6,294
1997	42,648	242.0	5,675	285.3	6,690
1998	43,425	249.1	5,735	309.0	7,115
1999	43,986	256.6	5,833	335.2	7,621
2000	44,458	262.7	5,910	—	—
2001	44,841	267.6	5,968	—	—
2002	45,175	271.9	6,020	—	—
2003	45,462	276.0	6,072	—	—
2004	45,677	280.5	6,140	—	—
2005	45,905	285.0	6,209	—	—
High alternative projections					
1995	41,049	238.3	5,805	251.7	6,131
1996	41,791	250.1	5,985	271.8	6,504
1997	42,648	262.0	6,143	292.6	6,861
1998	43,425	272.1	6,265	312.8	7,203
1999	43,986	281.6	6,402	333.8	7,589
2000	44,458	290.5	6,534	—	—
2001	44,841	297.8	6,641	—	—
2002	45,175	303.5	6,719	—	—
2003	45,462	308.7	6,791	—	—
2004	45,677	314.7	6,889	—	—
2005	45,905	320.8	6,989	—	—

[1] Based on the Consumer Price Index for all urban consumers, Bureau of Labor Statistics, U.S. Department of Labor.

[2] Projections in current dollars are not shown after 1999 due to the uncertain behavior of inflation over the long term.

[3] Current expenditures and average daily attendance are projected.

SOURCE: U.S. Department of Education, National Center for Education Statistics, *Statistics of State School Systems*; Common Core of Data survey; and the Early Estimates survey; and National Education Association, annual *Estimates of State School Statistics*. (Latest edition 1993–94. Copyright 1994 by the National Education Association. All rights reserved.) (This table was prepared September 1994.)

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Table 35.—Current expenditures and current expenditures per pupil in fall enrollment in public elementary and secondary schools, with alternative projections: 50 States and D.C., 1979–80 to 2004–2005

Year ending	Fall enrollment [1] (in thousands)	Current expenditures			
		Constant 1992–93 dollars [2]		Current dollars [3]	
		Total (in billions)	Per pupil in fall enrollment	Total (in billions)	Per pupil in fall enrollment
1980	41,651	$159.8	$3,836	$87.0	$2,088
1981	40,877	155.2	3,798	94.3	2,307
1982	40,044	153.1	3,824	101.1	2,525
1983	39,566	157.2	3,974	108.3	2,736
1984	39,252	161.6	4,117	115.4	2,940
1985	39,208	170.3	4,342	126.3	3,222
1986	39,422	179.6	4,556	137.2	3,479
1987	39,753	187.5	4,716	146.4	3,682
1988	40,008	193.2	4,829	157.1	3,927
1989	40,189	203.4	5,062	173.0	4,304
1990	40,543	210.5	5,192	187.6	4,626
1991	41,217	214.9	5,215	202.0	4,902
1992	42,047	217.8	5,179	211.2	5,023
1993 [4]	42,735	220.8	5,166	220.8	5,166
1994 [5]	43,353	227.0	5,236	233.1	5,377
		Middle alternative projections			
1995	44,237	234.5	5,300	248.5	5,616
1996	45,037	242.1	5,376	265.3	5,892
1997	45,960	251.2	5,467	284.8	6,197
1998	46,797	260.6	5,568	306.0	6,540
1999	47,403	269.1	5,677	327.6	6,912
2000	47,911	276.6	5,773	—	—
2001	48,323	282.5	5,847	—	—
2002	48,684	287.3	5,902	—	—
2003	48,994	291.8	5,957	—	—
2004	49,225	296.8	6,029	—	—
2005	49,470	301.9	6,102	—	—
		Low alternative projections			
1995	44,237	230.4	5,208	246.1	5,562
1996	45,037	234.7	5,211	263.0	5,841
1997	45,960	242.0	5,266	285.3	6,208
1998	46,797	249.1	5,322	309.0	6,602
1999	47,403	256.6	5,413	335.2	7,072
2000	47,911	262.7	5,484	—	—
2001	48,323	267.6	5,538	—	—
2002	48,684	271.9	5,586	—	—
2003	48,994	276.0	5,634	—	—
2004	49,225	280.5	5,697	—	—
2005	49,470	285.0	5,762	—	—
		High alternative projections			
1995	44,237	238.3	5,387	251.7	5,689
1996	45,037	250.1	5,554	271.8	6,035
1997	45,960	262.0	5,700	292.6	6,366
1998	46,797	272.1	5,814	312.8	6,684
1999	47,403	281.6	5,941	333.8	7,042
2000	47,911	290.5	6,063	—	—
2001	48,323	297.8	6,163	—	—
2002	48,684	303.5	6,234	—	—
2003	48,994	308.7	6,301	—	—
2004	49,225	314.7	6,392	—	—
2005	49,470	320.8	6,485	—	—

[1] Each enrollment number is for the fall of the school year ending in the school year shown in column 1. Hence, the enrollment number listed for 1980 is for fall 1979.

[2] Based on the Consumer Price Index for all urban consumers, Bureau of Labor Statistics, U.S. Department of Labor.

[3] Projections in current dollars are not shown after 1999 due to the uncertain behavior of inflation over the long term.

[4] Current expenditures are projected.

[5] Current expenditures are projected and fall enrollment is an early estimate.

SOURCE: U.S. Department of Education, National Center for Education Statistics, *Statistics of State School Systems*; *Statistics of Public Elementary and Secondary Schools*; "Selected Public and Private Elementary and Secondary Education Statistics," NCES Bulletin, October 23, 1979; Common Core of Data survey; and the Early Estimates survey; and National Education Association, annual *Estimates of State School Statistics*. (Latest edition 1993–94. Copyright 1994 by the National Education Association. All rights reserved.) (This table was prepared September 1994.)

Table 36.—Average annual salaries of classroom teachers in public elementary and secondary schools, with alternative projections: 50 States and D.C., 1979–80 to 2004–2005

Year ending	Constant 1992–93 dollars[1]	Current dollars[2]
1980	$29,335	$15,970
1981	29,040	17,644
1982	29,187	19,274
1983	30,054	20,695
1984	30,718	21,935
1985	31,803	23,600
1986	32,999	25,199
1987	34,032	26,569
1988	34,476	28,034
1989	34,768	29,564
1990	35,207	31,367
1991	35,203	33,090
1992	35,140	34,084
1993	35,027	35,027
1994	35,019	35,958
Middle alternative projections		
1995	35,513	37,630
1996	36,096	39,558
1997	36,750	41,660
1998	37,488	44,028
1999	37,990	46,250
2000	38,280	—
2001	38,527	—
2002	38,675	—
2003	38,829	—
2004	39,030	—
2005	39,232	—
Low alternative projections		
1995	35,154	37,546
1996	35,418	39,697
1997	35,917	42,341
1998	36,454	45,224
1999	36,876	48,179
2000	37,056	—
2001	37,217	—
2002	37,334	—
2003	37,460	—
2004	37,622	—
2005	37,784	—
High alternative projections		
1995	35,835	37,846
1996	36,820	40,010
1997	37,717	42,128
1998	38,506	44,273
1999	39,087	46,331
2000	39,492	—
2001	39,854	—
2002	40,074	—
2003	40,281	—
2004	40,564	—
2005	40,850	—

[1] Based on the Consumer Price Index for all urban consumers, Bureau of Labor Statistics, U.S. Department of Labor.

[2] Projections in current dollars are not shown after 1999 due to the uncertain behavior of inflation over the long term.

SOURCE: National Education Association, annual *Estimates of State School Statistics*. (Latest edition 1993–94. Copyright 1994 by the National Education Association. All rights reserved.) (This table was prepared September 1994.)

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Chapter 7

Expenditures of Institutions of Higher Education

The steady growth in higher education expenditures that has marked the 1980s and early 1990s is expected to continue throughout the 1990s and beyond. Key assumptions behind these projections are that the economy continues to grow at a steady rate, that inflation rates remain near current levels, and that enrollments increase as in the middle alternative projections presented in chapter 2. Projections based on alternative economic scenarios are discussed below.

The higher education system is examined by both control of institution (public versus private) and by type of institution (4-year versus 2-year). For each of these sectors of higher education, two different types of expenditures—current-fund expenditures and educational and general expenditures—are examined. All expenditure data have been adjusted for inflation. Since the historical trends and the projections of current-fund expenditures and educational and general expenditures are very similar, emphasis is given to current-fund expenditures.

Past Trends

Following a well-established trend, current-fund expenditures have increased significantly since 1979–80 (table 37 and figure 60). In real terms, current-fund expenditures increased 54.1 percent from 1979–80 to 1991–92. (1991–92 is the last year for which there are actual data.) From 1979–80 to 1993–94, current-fund expenditures are estimated to have increased 63.6 percent. The rate of increase in current-fund expenditures during this period has not been consistent. There have been years of rapid growth and slow growth, and even decline. Factors that can be associated with current-fund expenditures during these periods include: (1) the economy as a whole, and, for public institutions, the economic situation of state and local governments; (2) the inflation rate; and (3) enrollments.

Current-fund expenditures grew slowly from 1979–80 to 1981–82. During that period, current–fund expenditures increased 1.9 percent, from $104.5 billion to $106.5 billion in constant 1991–92 dollars. The economy was in a period of slow growth at that time. One measure of the state of the economy, disposable income per capita, rose only 1.1 percent. Inflation was also increasing rapidly. The average annual inflation rate for that period was over 10 percent as measured by the Consumer Price Index.

Current-fund expenditures have risen steadily since 1981–82. From 1981–82 to 1991–92, current-fund expenditures increased 51.2 percent.

The greatest increases occurred from 1981–82 to 1986–87, when current–fund expenditures rose 27.2 percent. The economy was increasing steadily during that period with disposable income per capita rising 11.1 percent.

Much of the 18.9 percent increase that occurred from 1986–87 to 1991–92 was due to the rapid increase in enrollments that occurred during that time. The number of students as measured by full-time-equivalent enrollment rose 14.3 percent. From 1981–82 to 1986–87, full-time-equivalent enrollment rose by 0.6 percent.

While current-fund expenditures in both public and private institutions rose, they did not rise at the same rate. From 1979–80 to 1991–92, current-fund expenditures increased 46.9 percent in public institutions and 68.2 percent in private institutions.

For the period under examination, educational and general expenditures have been an almost constant percentage of current-fund expenditures (about 78 percent). Hence, the trend for educational and general expenditures is virtually identical to that for current-fund expenditures (table 38 and figure 61). Total educational and general expenditures in constant dollars increased 53.2 percent from 1979–80 to 1991–92. There was a 43.9 percent increase in educational and general expenditures in public colleges from 1979–80 to 1991–92 and a 73.6 percent increase in private colleges.

Since the trends of current-fund expenditures for the different sectors show some differences, the data are examined separately for each sector, except private 2-year institutions. Expenditures are examined both as a total and per student in full-time-equivalent (FTE) enrollment.

The trend for private 2-year projections is not shown separately because there have been significant additions to the universe of private 2-year institutions since 1979–80. Private 2-year institutions comprise the smallest of the higher education sectors. In 1991–92, they accounted for only 0.9 percent of total current-fund expenditures and 2.0 percent of FTE enrollment.

Public 4-Year Institutions

The trend for current-fund expenditures in public 4-year institutions is very similar to that for all institutions (table 39). The period from 1979–80 to 1981–82 saw

current-fund expenditures increase only 0.8 percent. Since then, current expenditures have increased steadily. From 1981–82 to 1991–92 current-fund expenditures increased 47.4 percent. As with the trend for all institutions, the most rapid growth occurred from 1981–82 to 1986–87 when current-fund expenditures rose 25.0 percent. During that time, full-time-equivalent enrollment increased by only 2.1 percent.

When current-fund expenditures are examined on a per student basis, a somewhat different pattern emerges. With the slowing down of the economy, the rise in inflation, and the increase in enrollment, current-fund expenditures per student fell 2.7 percent from 1979–80 to 1981–82. As with total current-fund expenditures, current-fund expenditures per student rose each year from 1981–82 to 1991–92. Almost all of the increase occurred from 1981–82 to 1986–87 when current-fund expenditures per student rose 22.5 percent. From 1986–87 to 1991–92, when FTE enrollment rose 11.6 percent, current-fund expenditures per student only rose 4.7 percent.

The trend for educational and general expenditures (table 40) is similar to that for current-fund expenditures.

Public 2-Year Institutions

Public 2-year institutions show a similar trend to public 4-year institutions (table 41). There was a small 1.1 percent increase in current-fund expenditures in public 2-year institutions from 1979–80 to 1981–82. This was followed by an 18.3 percent increase from 1981–82 to 1986–87. A further 20.8 increase occurred from 1986–87 to 1991–92, when enrollments rose 23.5 percent.

As with public 4-year current-fund expenditures, a somewhat different pattern emerges when public 2-year current-fund expenditures are placed in per student terms. With total current-fund expenditures increasing 1.1 percent and enrollments rising 10.3 percent, current-fund expenditures per student fell 8.3 percent from 1979–80 to 1981–82. Between 1981–82 and 1986–87, current-fund expenditures per student rose 22.6 percent. From 1986–87 to 1991–92, current-fund expenditures per student fell 2.2 percent.

The trend for educational and general expenditures (table 42) is similar to that for current-fund expenditures.

Private 4-Year Institutions

From 1979–80 until 1981–82, current-fund expenditures in private 4-year institutions rose 3.5 percent. Like public institutions, current-fund expenditures rose rapidly throughout the rest of the 1980's. From 1981–82 to 1991–92, current-fund expenditures rose 62.8 percent (table 43).

With the increase in the number of students and the slowdown in the economy, expenditures per student fell 0.8 percent from 1979–80 to 1981–82. Since then, current-fund expenditures per student have been rising. From 1981–82 to 1986–87, current-fund expenditures per student rose 31.9 percent. After that, as enrollments increased, current expenditures per student have continued to increase, but not at as rapid a rate. From 1986–87 to 1991–92, current expenditures per student rose 10.2 percent.

The trend for educational and general expenditures (table 44) is similar to that for current-fund expenditures.

Alternative Projections

Projections have been prepared for each of the sectors of higher education. With the exception of the private 2-year sector, these projections have been developed using regression models. In most cases, expenditures per student are seen as being related to the state of the economy (as measured by either disposable income per capita or the revenues of state and local governments per capita), the inflation rate, and enrollments. (For more details, see appendix A6.) Hence, the forecasts for higher education expenditures depend on the forecasts for these three types of inputs. Another important factor is that the relationships that have existed among the variables in the past continue throughout the projection period.

Three sets of projections are presented in this chapter. Each is based on an alternative set of assumptions for the state of the economy, specifically, a different growth path for either disposable income per capita or the revenues of state and local governments per capita. These alternative scenarios for the state of the economy were developed using the U.S. Quarterly Model developed by DRI/McGraw–Hill.

The middle alternative projections are based on the assumption that the economy continues to grow at a steady rate (disposable income per capita increases each year from 1994–95 to 2004–2005 at a rate between 0.6 and 1.7 percent and the revenues of state and local governments per capita increase at rates between 0.8 percent and 3.2 percent.) Two alternative sets of projections were developed to show the impact of various economic scenarios. In the low alternative, the economy grows at a lower rate than in the middle alternative set of projections. The growth rate of disposable income per capita varies between -0.4 and 1.4 percent and that for the revenues of state and local governments per capita varies between 0.9 and 3.0 percent. In the high alternative, the economy enters a period of rapid growth and disposable income grows at rates between 0.7 and 4.0 percent and the revenues of state and local governments per capita grow at rates between 1.0 and 5.4 percent.

The three alternative sets of projections are also based on alternative projections for the inflation rate. The projections for the inflation rate were also developed using the U.S. Quarterly Model. For the forecast period, they range from 3.2 percent to 4.1 percent for the middle alternative, 4.0 percent to 5.4 percent for the low alternative, and 2.8 percent to 3.7 percent for the high alternative. The projections of the enrollment are those for the middle alternative projections for full-time-equivalent enrollment presented in chapter 2.

The projections in this chapter are presented in both constant 1991–92 dollars and in current dollars. The

projections were developed in constant dollars and then placed in current dollars using projections for the Consumer Price Index (CPI). Three alternative sets of projections for the CPI were developed, one for use with the middle alternative projections, one for use with the low alternative projections, and one for use with the high alternative projections. These three alternative sets of projections for the CPI were developed using the U.S. Quarterly Model. As the set of projections for the CPI developed for use with the low alternative projections is rising at the most rapid rate and that developed for use with the high alternative projections is rising at the slowest rate, it is frequently the case that the current dollar projections from the low alternative set of projections are higher than those from the other two alternative sets of projections.

Due to the short time series of consistent data, only one set of projections was produced for private 2-year institutions. This was included in each of the alternative projections. The set of projections for private 2-year institutions is not examined separately.

All of the alternative projections indicate an increase in current-fund expenditures throughout the remainder of the century. In the middle alternative projection, current-fund expenditures are projected to reach $229.4 billion in 2004–2005. This is a 42.4 percent increase from 1991–92, the last year for which there are actual data. In the low alternative projection, current-fund expenditures are projected to increase to $226.3 billion. In the high alternative projection, the figure for 2004–2005 is $233.0 billion.

A similar pattern is seen for educational and general expenditures. In the middle alternative projection, educational and general expenditures are projected to be $172.7 billion in 2004–2005, a 37.8–percent increase from 1991–92. In the low alternative projection, educational and general expenditures are projected to increase to $169.5 billion. In the high alternative projection, the figure for 2004–2005 is $176.5 billion.

Public 4-Year Institutions

There are only small differences in the trends among the various sectors of higher education. In public 4-year institutions, current-fund expenditures are projected to reach $119.7 billion in the middle alternative projection in 2004–2005 (table 40). This is a 42.6 percent increase from 1991–92 to 2004–2005. In the low alternative projection, the value for 2004–2005 is $118.9 billion and in the high alternative projection, it is $120.8 billion.

Since full-time-equivalent (FTE) enrollment is projected to increase by 12.4 percent from 1991–92 to 2004–2005, the rate of increase for expenditures is lower on a per student basis. In the middle alternative projection, a 26.9 percent increase is projected for the period from 1991–92 to 2004–2005 compared with 26.1 percent for the low alternative projection and 28.2 percent for the high alternative projection. The most rapid increases are projected to occur from 1994–95 to 1998–99, when FTE enrollments are projected to increase slowly.

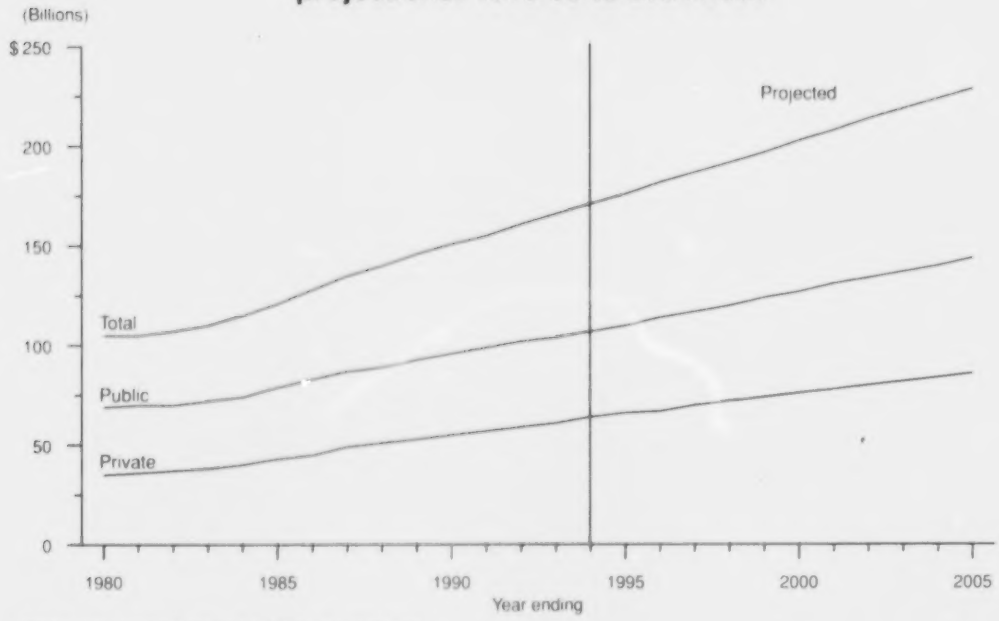
Public 2-Year Institutions

Expenditures are also seen as increasing in public 2-year institutions. For instance, in the middle alternative projection, current-fund expenditures are projected to reach $24.1 billion in 2004–2005 and expenditures per student are projected to increase to $7,188. When the low alternative projection is used, with its lower growth path for revenues of state and local governments per capita, lower values for current expenditure are found. When the high alternative projection is used, with its higher growth path for revenues of state and local governments per capita, higher values are found. The most rapid increases for expenditures per student are projected to occur from 1993–94 to 1996–97, when the slowest growth in FTE enrollments is projected.

Private 4-Year Institutions

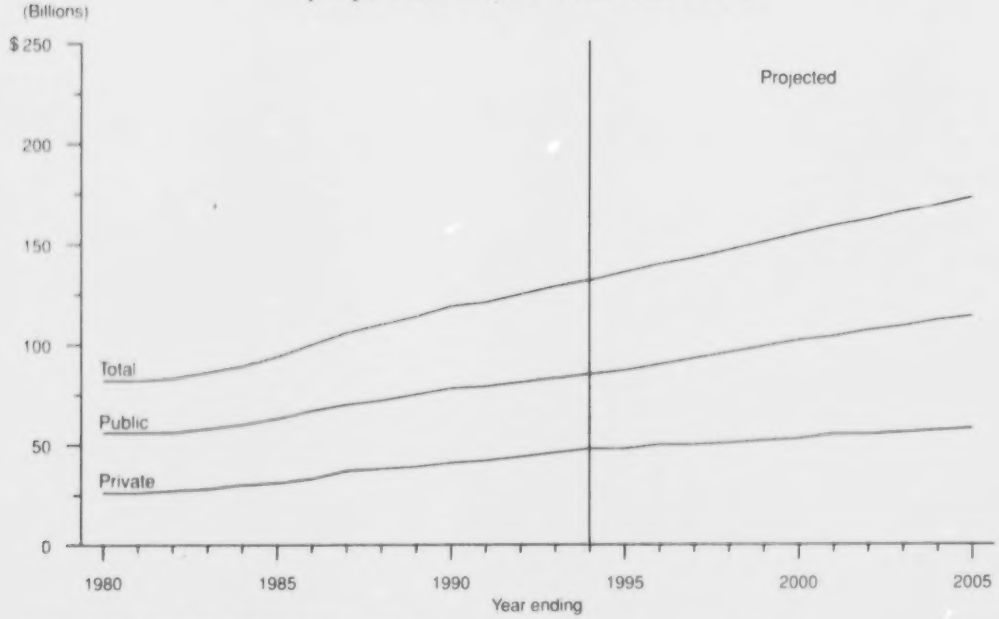
The trends for private 4-year institutions exhibit the same patterns as other types of institutions. Total current-fund expenditures are seen as increasing each year. In the middle alternative projection, from 1991–92 to 2004–2005, they are projected to increase 45.7 percent. Current-fund expenditures per student are projected to increase 29.2 percent during the same time.

Figure 60
Current-fund expenditures (in constant 1992-93 dollars) of public and private institutions of higher education, with middle alternative projections: 1979-80 to 2004-2005



NOTE: Data for 1992-93 and 1993-94 are projected.

Figure 61
Educational and general expenditures (in constant 1992-93 dollars) of public and private institutions of higher education, with middle alternative projections: 1979-80 to 2004-2005



NOTE: Data for 1992-93 and 1993-94 are projected.

Table 37.—Current-fund expenditures of public and private institutions of higher education, with alternative projections: 50 States and D.C., 1979–80 to 2004–2005

Year ending	Constant 1992–93 dollars[1] (in billions)			Current dollars (in billions)		
	Total	Public	Private	Total	Public	Private
1980	$104.5	$69.4	$35.2	$56.9	$37.8	$19.1
1981	105.4	69.6	35.8	64.1	42.3	21.8
1982	106.5	70.0	36.5	70.3	46.2	24.1
1983	110.3	72.0	38.3	75.9	49.6	26.4
1984	114.8	74.3	40.5	82.0	53.1	28.9
1985	121.2	78.6	42.6	90.0	58.3	31.6
1986	127.7	82.8	45.0	97.5	63.2	34.3
1987	135.5	86.7	48.8	105.8	67.7	38.1
1988	139.9	89.3	50.6	113.8	72.6	41.1
1989	145.7	92.8	52.8	123.9	78.9	44.9
1990	151.1	96.3	54.9	134.7	85.8	48.9
1991	155.4	98.9	56.5	146.1	93.0	53.1
1992	161.1	101.9	59.2	156.2	98.8	57.4
1993[2]	165.8	104.5	61.3	165.8	104.5	61.3
1994[2]	171.1	107.3	63.7	175.6	110.2	65.5
Middle alternative projections						
1995	176.0	110.3	65.7	186.5	116.9	69.6
1996	181.7	114.2	67.5	199.1	125.2	73.9
1997	186.6	116.8	69.8	211.5	132.4	79.1
1998	192.1	120.3	71.8	225.6	141.3	84.3
1999	197.5	123.6	73.9	240.4	150.5	89.9
2000	203.0	127.2	75.9	—	—	—
2001	208.5	130.6	77.8	—	—	—
2002	213.7	134.0	79.7	—	—	—
2003	218.8	137.2	81.6	—	—	—
2004	223.9	140.3	83.6	—	—	—
2005	229.4	143.7	85.7	—	—	—
Low alternative projections						
1995	175.1	110.3	64.8	187.0	117.8	69.2
1996	179.8	113.6	66.2	201.5	127.3	74.2
1997	184.1	115.7	68.4	217.1	136.4	80.6
1998	189.7	119.2	70.5	235.3	147.9	87.4
1999	194.9	122.4	72.5	254.6	160.0	94.7
2000	200.2	125.8	74.4	—	—	—
2001	205.5	129.2	76.3	—	—	—
2002	210.7	132.5	78.2	—	—	—
2003	215.8	135.7	80.1	—	—	—
2004	220.9	138.8	82.1	—	—	—
2005	226.3	142.2	84.1	—	—	—
High alternative projections						
1995	176.7	110.4	66.3	186.6	116.5	70.0
1996	183.3	115.0	68.4	199.2	124.9	74.3
1997	188.8	118.1	70.7	210.9	131.9	79.0
1998	194.5	121.7	72.8	223.6	139.9	83.7
1999	200.0	125.1	74.9	237.1	148.3	88.8
2000	205.7	128.8	76.9	—	—	—
2001	211.4	132.5	78.9	—	—	—
2002	216.8	135.9	80.9	—	—	—
2003	222.1	139.3	82.8	—	—	—
2004	227.3	142.5	84.8	—	—	—
2005	233.0	146.1	87.0	—	—	—

[1] Based on the Consumer Price Index for all urban consumers, Bureau of Labor Statistics, U.S. Department of Labor.

[2] Projected.

— Projections in current dollars are not shown after 1999 due to the uncertain behavior of inflation over the long term.

SOURCE: U.S. Department of Education, National Center for Education Statistics, "Financial Statistics of Institutions of Higher Education," and "Fall Enrollment in Colleges and Universities" surveys. (This table was prepared September 1994.)

Table 38.—Educational and general expenditures of public and private institutions of higher education, with alternative projections: 50 States and D.C., 1979–80 to 2004–2005

Year ending	Constant 1992–93 dollars[1] (in billions)			Current dollars (in billions)		
	Total	Public	Private	Total	Public	Private
1980	$81.8	$56.3	$25.6	$44.5	$30.6	$13.9
1981	82.4	56.2	26.2	50.1	34.2	15.9
1982	83.1	56.3	26.8	54.8	37.2	17.7
1983	85.6	57.7	27.9	58.9	39.7	19.2
1984	89.3	59.6	29.6	63.7	42.6	21.1
1985	94.4	63.2	31.2	70.1	46.9	23.2
1986	99.7	66.6	33.1	76.1	50.9	25.3
1987	106.3	69.6	36.6	83.0	54.4	28.6
1988	109.7	72.1	37.5	89.2	58.6	30.5
1989	113.8	74.6	39.2	96.8	63.4	33.4
1990	118.5	77.6	40.9	105.6	69.2	36.4
1991	121.4	79.1	42.3	114.1	74.4	39.7
1992	125.3	81.0	44.4	121.6	78.5	43.0
1993[2]	129.0	83.1	45.9	129.0	83.1	45.9
1994[2]	132.5	84.9	47.6	136.0	87.2	48.9
			Middle alternative projections			
1995	136.0	87.5	48.5	144.1	92.7	51.4
1996	140.0	90.5	49.5	153.4	99.1	54.3
1997	143.4	93.2	50.3	162.6	105.6	57.0
1998	147.4	96.2	51.3	173.2	112.9	60.2
1999	151.2	98.8	52.4	184.1	120.3	63.8
2000	155.0	101.6	53.5	—	—	—
2001	158.7	104.2	54.5	—	—	—
2002	162.2	106.7	55.5	—	—	—
2003	165.6	109.1	56.5	—	—	—
2004	169.0	111.6	57.4	—	—	—
2005	172.7	114.2	58.5	—	—	—
			Low alternative projections			
1995	135.0	87.5	47.6	144.2	93.4	50.8
1996	138.0	89.8	48.2	154.7	100.7	54.0
1997	141.0	92.1	48.9	166.2	108.6	57.6
1998	144.9	95.1	49.9	179.8	118.0	61.9
1999	148.6	97.7	50.9	194.1	127.6	66.5
2000	152.2	100.3	51.9	—	—	—
2001	155.7	102.8	52.9	—	—	—
2002	159.1	105.3	53.8	—	—	—
2003	162.5	107.7	54.8	—	—	—
2004	165.8	110.2	55.7	—	—	—
2005	169.5	112.8	56.7	—	—	—
			High alternative projections			
1995	136.7	87.5	49.2	144.4	92.4	51.9
1996	141.7	91.2	50.5	154.0	99.1	54.9
1997	145.7	94.4	51.3	162.8	105.5	57.3
1998	149.9	97.5	52.4	172.3	112.1	60.3
1999	153.8	100.3	53.5	182.3	118.9	63.5
2000	157.9	103.2	54.7	—	—	—
2001	161.8	106.0	55.8	—	—	—
2002	165.4	108.6	56.8	—	—	—
2003	169.0	111.2	57.8	—	—	—
2004	172.6	113.7	58.8	—	—	—
2005	176.5	116.5	60.0	—	—	—

[1] Based on the Consumer Price Index for all urban consumers, Bureau of Labor Statistics, U.S. Department of Labor.

[2] Projected.

—Projections in current dollars are not shown after 1999 due to the uncertain behavior of inflation over the long term.

SOURCE: U.S. Department of Education, National Center for Education Statistics, "Financial Statistics of Institutions of Higher Education," and "Fall Enrollment in Colleges and Universities" surveys. (This table was prepared September 1994.)

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Table 39.—Current-fund expenditures and current-fund expenditures per full-time-equivalent (FTE) student of public 4-year institutions, with alternative projections: 50 States and D.C., 1979–80 to 2004–2005

Year ending	Full-time-equivalent enrollment (in thousands)	Current-fund expenditures			
		Constant 1992–93 dollars[1]		Current dollars	
		Total (in billions)	Per student in FTE	Total (in billions)	Per student in FTE
1980	4,059	$56.9	$14,019	$31.0	$7,632
1981	4,158	57.1	13,726	34.7	8,339
1982	4,209	57.4	13,634	37.9	9,003
1983	4,221	59.0	13,975	40.6	9,623
1984	4,266	61.0	14,310	43.6	10,218
1985	4,238	64.7	15,269	48.0	11,330
1986	4,240	68.3	16,119	52.2	12,309
1987	4,295	71.7	16,700	56.0	13,038
1988	4,396	74.0	16,826	60.1	13,681
1989	4,506	76.8	17,054	65.3	14,503
1990	4,620	79.5	17,217	70.9	15,339
1991	4,740	81.6	17,218	76.7	16,186
1992	4,796	83.9	17,492	81.4	16,965
1993[2]	4,800	86.1	17,938	86.1	17,938
1994[2]	4,935	88.9	18,011	91.3	18,494
		Middle alternative projections			
1995	4,942	91.4	18,494	96.8	19,596
1996	5,044	94.5	18,741	103.6	20,539
1997	4,942	96.6	19,555	109.6	22,168
1998	4,962	99.4	20,039	116.8	23,536
1999	5,006	102.2	20,416	124.4	24,854
2000	5,077	105.2	20,714	—	—
2001	5,158	108.1	20,967	—	—
2002	5,230	111.1	21,235	—	—
2003	5,294	113.9	21,518	—	—
2004	5,326	116.6	21,902	—	—
2005	5,390	119.7	22,199	—	—
		Low alternative projections			
1995	4,942	91.4	18,491	97.6	19,749
1996	5,044	94.2	18,678	105.6	20,935
1997	4,942	96.1	19,447	113.3	22,925
1998	4,962	98.9	19,928	122.7	24,722
1999	5,006	101.6	20,300	132.8	26,522
2000	5,077	104.5	20,586	—	—
2001	5,158	107.4	20,831	—	—
2002	5,230	110.3	21,098	—	—
2003	5,294	113.2	21,380	—	—
2004	5,326	115.9	21,763	—	—
2005	5,390	118.9	22,057	—	—
		High alternative projections			
1995	4,942	91.4	18,498	96.5	19,535
1996	5,044	94.9	18,815	103.1	20,445
1997	4,942	97.3	19,686	108.7	21,988
1998	4,962	100.1	20,177	115.1	23,199
1999	5,006	103.0	20,567	122.0	24,378
2000	5,077	106.0	20,878	—	—
2001	5,158	109.1	21,147	—	—
2002	5,230	112.0	21,423	—	—
2003	5,294	115.0	21,716	—	—
2004	5,326	117.7	22,108	—	—
2005	5,390	120.8	22,418	—	—

[1] Based on the Consumer Price Index for all urban consumers, Bureau of Labor Statistics, U.S. Department of Labor.

[2] Projected.

—Projections in current dollars are not shown after 1999 due to the uncertain behavior of inflation over the long term.

SOURCE: U.S. Department of Education, National Center for Education Statistics, "Financial Statistics of Institutions of Higher Education," and "Fall Enrollment in Colleges and Universities" surveys. (This table was prepared September 1994.)

Table 40.—Educational and general expenditures and educational and general expenditures per full-time-equivalent (FTE) student of public 4-year institutions, with alternative projections: 50 States and D.C., 1979–80 to 2004–2005

Year ending	Full-time-equivalent enrollment (in thousands)	Current-fund expenditures			
		Constant 1992–93 dollars[1]		Current dollars	
		Total (in billions)	Per student in FTE	Total (in billions)	Per student in FTE
1980	4,059	$44.6	$10,993	$24.3	$5,985
1981	4,158	44.6	10,723	27.1	6,515
1982	4,209	44.5	10,579	29.4	6,986
1983	4,221	45.6	10,796	31.4	7,434
1984	4,266	47.3	11,087	33.8	7,917
1985	4,238	50.3	11,859	37.3	8,800
1986	4,240	53.2	12,545	40.6	9,580
1987	4,295	55.7	12,976	43.5	10,130
1988	4,396	57.8	13,143	47.0	10,686
1989	4,506	59.7	13,252	50.8	11,270
1990	4,620	62.1	13,433	55.3	11,968
1991	4,740	63.1	13,302	59.3	12,504
1992	4,796	64.2	13,392	62.3	12,988
1993[2]	4,800	66.1	13,769	66.1	13,769
1994[2]	4,935	67.8	13,747	69.7	14,116
		Middle alternative projections			
1994	4,942	70.0	14,155	74.1	14,998
1995	5,044	72.2	14,304	79.1	15,676
1996	4,942	74.4	15,062	84.4	17,074
1997	4,962	76.7	15,464	90.1	18,162
1998	5,006	78.9	15,758	96.0	19,184
1999	5,077	81.1	15,969	—	—
2000	5,158	83.2	16,135	—	—
2001	5,230	85.3	16,319	—	—
2002	5,294	87.5	16,520	—	—
2003	5,326	89.6	16,827	—	—
2004	5,390	91.9	17,041	—	—
		Low alternative projections			
1994	4,942	69.9	14,152	74.7	15,115
1995	5,044	71.9	14,249	80.6	15,970
1996	4,942	74.0	14,967	87.2	17,643
1997	4,962	76.2	15,366	94.6	19,062
1998	5,006	78.4	15,656	102.4	20,455
1999	5,077	80.5	15,856	—	—
2000	5,158	82.6	16,015	—	—
2001	5,230	84.7	16,198	—	—
2002	5,294	86.8	16,399	—	—
2003	5,326	89.0	16,705	—	—
2004	5,390	91.2	16,916	—	—
		High alternative projections			
1994	4,942	70.0	14,158	73.9	14,952
1995	5,044	72.5	14,369	78.8	15,614
1996	4,942	75.0	15,177	83.8	16,952
1997	4,962	77.3	15,585	88.9	17,919
1998	5,006	79.5	15,891	94.3	18,836
1999	5,077	81.8	16,113	—	—
2000	5,158	84.0	16,293	—	—
2001	5,230	86.2	16,484	—	—
2002	5,294	88.4	16,694	—	—
2003	5,326	90.6	17,008	—	—
2004	5,390	92.9	17,234	—	—

[1] Based on the Consumer Price Index for all urban consumers, Bureau of Labor Statistics, U.S. Department of Labor.

[2] Projected.

—Projections in current dollars are not shown after 1999 due to the uncertain behavior of inflation over the long term.

SOURCE: U.S. Department of Education, National Center for Education Statistics, "Financial Statistics of Institutions of Higher Education," and "Fall Enrollment in Colleges and Universities" surveys. (This table was prepared September 1994.)

Table 41.—Current-fund expenditures and current-fund expenditures per full-time-equivalent (FTE) student of public 2-year institutions, with alternative projections: 50 States and D.C., 1979–80 to 2004–2005

Year ending	Full-time-equivalent enrollment (in thousands)	Current-fund expenditures			
		Constant 1992–93 dollars[1]		Current dollars	
		Total (in billions)	Per student in FTE	Total (in billions)	Per student in FTE
1980	2,333	$12.5	$5,345	$6.8	$2,910
1981	2,484	12.5	5,037	7.6	3,061
1982	2,573	12.6	4,903	8.3	3,238
1983	2,630	13.0	4,946	9.0	3,406
1984	2,616	13.3	5,086	9.5	3,631
1985	2,447	13.9	5,672	10.3	4,209
1986	2,428	14.4	5,938	11.0	4,534
1987	2,483	14.9	6,012	11.7	4,693
1988	2,542	15.4	6,050	12.5	4,919
1989	2,591	16.0	6,170	13.6	5,247
1990	2,752	16.7	6,080	14.9	5,417
1991	2,818	17.3	6,130	16.2	5,763
1992	3,067	18.0	5,878	17.5	5,700
1993[2]	3,116	18.4	5,892	18.4	5,892
1994[2]	3,057	18.4	6,028	18.9	6,189
Middle alternative projections					
1995	3,083	18.9	6,138	20.1	6,504
1996	3,139	19.7	6,279	21.6	6,882
1997	3,116	20.2	6,469	22.9	7,334
1998	3,144	20.9	6,641	24.5	7,800
1999	3,172	21.4	6,750	26.1	8,217
2000	3,212	22.0	6,846	—	—
2001	3,255	22.5	6,912	—	—
2002	3,285	22.9	6,975	—	—
2003	3,315	23.3	7,024	—	—
2004	3,321	23.6	7,113	—	—
2005	3,349	24.1	7,188	—	—
Low alternative projections					
1995	3,083	18.9	6,133	20.2	6,551
1996	3,139	19.4	6,178	21.7	6,924
1997	3,116	19.6	6,296	23.1	7,422
1998	3,144	20.3	6,462	25.2	8,017
1999	3,172	20.8	6,564	27.2	8,576
2000	3,212	21.3	6,640	—	—
2001	3,255	21.8	6,695	—	—
2002	3,285	22.2	6,755	—	—
2003	3,315	22.6	6,803	—	—
2004	3,321	22.9	6,891	—	—
2005	3,349	23.3	6,960	—	—
High alternative projections					
1995	3,083	18.9	6,144	20.0	6,489
1996	3,139	20.1	6,397	21.8	6,951
1997	3,116	20.8	6,679	23.2	7,460
1998	3,144	21.6	6,862	24.8	7,890
1999	3,172	22.2	6,992	26.3	8,288
2000	3,212	22.8	7,109	—	—
2001	3,255	23.4	7,201	—	—
2002	3,285	23.9	7,277	—	—
2003	3,315	24.3	7,341	—	—
2004	3,321	24.7	7,443	—	—
2005	3,349	25.3	7,540	—	—

[1] Based on the Consumer Price Index for all urban consumers, Bureau of Labor Statistics, U.S. Department of Labor.

[2] Projected.

—Projections in current dollars are not shown after 1999 due to the uncertain behavior of inflation over the long term.

SOURCE: U.S. Department of Education, National Center for Education Statistics, "Financial Statistics of Institutions of Higher Education," and "Fall Enrollment in Colleges and Universities" surveys. (This table was prepared September 1994.)

Table 42.—Educational and general expenditures and educational and general expenditures per full-time-equivalent (FTE) student of public 2-year institutions, with alternative projections: 50 States and D.C., 1979–80 to 2004–2005

Year ending	Full-time-equivalent enrollment (in thousands)	Current-fund expenditures			
		Constant 1992–93 dollars[1]		Current dollars	
		Total (in billions)	Per student in FTE	Total (in billions)	Per student in FTE
1980	2,333	$11.6	$4,987	$6.3	$2,715
1981	2,484	11.7	4,693	7.1	2,851
1982	2,573	11.8	4,574	7.8	3,021
1983	2,630	12.1	4,601	8.3	3,168
1984	2,616	12.4	4,723	8.8	3,372
1985	2,447	12.9	5,276	9.6	3,915
1986	2,428	13.4	5,533	10.3	4,225
1987	2,483	13.9	5,596	10.8	4,369
1988	2,542	14.3	5,645	11.7	4,590
1989	2,591	14.9	5,748	12.7	4,888
1990	2,752	15.6	5,660	13.9	5,042
1991	2,818	16.1	5,710	15.1	5,367
1992	3,067	16.7	5,460	16.2	5,296
1993[2]	3,116	17.0	5,471	17.0	5,471
1994[2]	3,057	17.1	5,581	17.5	5,731
Middle alternative projections					
1995	3,083	17.5	5,687	18.6	6,026
1996	3,139	18.3	5,832	20.1	6,391
1997	3,116	18.7	6,008	21.2	6,811
1998	3,144	19.4	6,178	22.8	7,256
1999	3,172	19.9	6,283	24.3	7,649
2000	3,212	20.5	6,377	—	—
2001	3,255	21.0	6,441	—	—
2002	3,285	21.3	6,497	—	—
2003	3,315	21.7	6,540	—	—
2004	3,321	22.0	6,618	—	—
2005	3,349	22.4	6,686	—	—
Low alternative projections					
1995	3,083	17.5	5,681	18.7	6,068
1996	3,139	18.0	5,726	20.1	6,418
1997	3,116	18.2	5,827	21.4	6,869
1998	3,144	18.8	5,991	23.4	7,433
1999	3,172	19.3	6,088	25.2	7,954
2000	3,212	19.8	6,161	—	—
2001	3,255	20.2	6,213	—	—
2002	3,285	20.6	6,267	—	—
2003	3,315	20.9	6,308	—	—
2004	3,321	21.2	6,385	—	—
2005	3,349	21.6	6,447	—	—
High alternative projections					
1995	3,083	17.6	5,693	18.5	6,012
1996	3,139	18.7	5,956	20.3	6,471
1997	3,116	19.4	6,228	21.7	6,956
1998	3,144	20.2	6,410	23.2	7,370
1999	3,172	20.7	6,536	24.6	7,748
2000	3,212	21.4	6,652	—	—
2001	3,255	21.9	6,743	—	—
2002	3,285	22.4	6,813	—	—
2003	3,315	22.8	6,872	—	—
2004	3,321	23.1	6,963	—	—
2005	3,349	23.6	7,054	—	—

[1] Based on the Consumer Price Index for all urban consumers, Bureau of Labor Statistics, U.S. Department of Labor.

[2] Projected.

—Projections in current dollars are not shown after 1999 due to the uncertain behavior of inflation over the long term.

SOURCE: U.S. Department of Education, National Center for Education Statistics, "Financial Statistics of Institutions of Higher Education," and "Fall Enrollment in Colleges and Universities" surveys. (This table was prepared September 1994.)

Table 43.—Current-fund expenditures and current-fund expenditures per full-time-equivalent (FTE) student of private 4-year institutions, with alternative projections: 50 States and D.C., 1979–80 to 2004–2005

Year ending	Full-time-equivalent enrollment (in thousands)	Current-fund expenditures			
		Constant 1992–93 dollars[1]		Current dollars	
		Total (in billions)	Per student in FTE	Total (in billions)	Per student in FTE
1980	1,957	$33.3	$17,009	$18.7	$9,547
1981	2,003	33.8	16,865	21.2	10,565
1982	2,041	34.4	16,867	23.4	11,485
1983	2,028	36.1	17,793	25.6	12,633
1984	2,059	38.2	18,527	28.1	13,641
1985	2,055	40.2	19,542	30.7	14,952
1986	2,055	42.4	20,630	33.4	16,244
1987	2,065	45.9	22,250	37.0	17,910
1988	2,091	47.7	22,824	40.0	19,134
1989	2,158	49.9	23,138	43.8	20,289
1990	2,194	51.9	23,676	47.7	21,749
1991	2,228	53.5	24,021	51.9	23,282
1992	2,286	56.0	24,518	56.0	24,518
1993[2]	2,332	58.2	24,974	60.0	25,751
1994[2]	2,377	60.5	25,451	64.1	26,946
Middle alternative projections					
1995	2,383	62.4	26,174	68.1	28,597
1996	2,431	64.1	26,361	72.4	29,788
1997	2,382	66.3	27,840	77.5	32,542
1998	2,390	68.3	28,575	82.7	34,605
1999	2,408	70.3	29,191	88.2	36,643
2000	2,439	72.2	29,601	—	—
2001	2,474	74.1	29,940	—	—
2002	2,504	75.9	30,304	—	—
2003	2,533	77.7	30,692	—	—
2004	2,546	79.7	31,294	—	—
2005	2,577	81.6	31,675	—	—
Low alternative projections					
1995	2,383	61.5	25,829	67.8	28,444
1996	2,431	62.9	25,858	72.6	29,883
1997	2,382	65.0	27,293	79.0	33,175
1998	2,390	67.0	28,030	85.7	35,854
1999	2,408	68.9	28,619	92.8	38,553
2000	2,439	70.8	29,016	—	—
2001	2,474	72.6	29,339	—	—
2002	2,504	74.4	29,707	—	—
2003	2,533	76.2	30,100	—	—
2004	2,546	78.2	30,700	—	—
2005	2,577	80.1	31,076	—	—
High alternative projections					
1995	2,383	63.0	26,428	68.6	28,779
1996	2,431	64.9	26,716	72.8	29,933
1997	2,382	67.2	28,231	77.4	32,514
1998	2,390	69.3	28,984	82.1	34,360
1999	2,408	71.3	29,596	87.1	36,173
2000	2,439	73.2	30,017	—	—
2001	2,474	75.1	30,365	—	—
2002	2,504	77.0	30,748	—	—
2003	2,533	78.9	31,133	—	—
2004	2,546	80.8	31,753	—	—
2005	2,577	82.9	32,158	—	—

[1] Based on the Consumer Price Index for all urban consumers, Bureau of Labor Statistics, U.S. Department of Labor.

[2] Projected.

—Projections in current dollars are not shown after 1999 due to the uncertain behavior of inflation over the long term.

SOURCE: U.S. Department of Education, National Center for Education Statistics, "Financial Statistics of Institutions of Higher Education," and "Fall Enrollment in Colleges and Universities" surveys. (This table was prepared September 1994.)

Table 44.—Educational and general expenditures and educational and general expenditures per full-time-equivalent (FTE) student of private 4-year institutions, with alternative projections: 50 States and D.C., 1979–80 to 2004–2005

Year ending	Full-time-equivalent enrollment (in thousands)	Current-fund expenditures			
		Constant 1992–93 dollars[1]		Current dollars	
		Total (in billions)	Per student in FTE	Total (in billions)	Per student in FTE
1980	1,957	$24.8	$12,699	$13.5	$6,913
1981	2,003	25.3	12,633	15.4	7,675
1982	2,041	25.9	12,680	17.1	8,373
1983	2,028	27.0	13,307	18.6	9,163
1984	2,059	28.6	13,898	20.4	9,924
1985	2,055	30.2	14,684	22.4	10,897
1986	2,055	31.9	15,548	24.4	11,873
1987	2,065	35.3	17,101	27.6	13,351
1988	2,091	36.3	17,344	29.5	14,102
1989	2,158	38.0	17,624	32.3	14,988
1990	2,194	39.7	18,092	35.4	16,119
1991	2,228	41.1	18,430	38.6	17,324
1992	2,286	43.1	18,864	41.8	18,295
1993[2]	2,332	44.7	19,190	44.7	19,190
1994[2]	2,377	46.3	19,497	47.6	20,020
		Middle alternative projections			
1995	2,383	47.2	19,819	50.0	21,000
1996	2,431	48.2	19,844	52.9	21,747
1997	2,382	49.0	20,571	55.5	23,320
1998	2,390	50.0	20,922	58.7	24,573
1999	2,408	51.1	21,219	62.2	25,833
2000	2,439	52.2	21,388	—	—
2001	2,474	53.2	21,506	—	—
2002	2,504	54.1	21,620	—	—
2003	2,533	55.1	21,757	—	—
2004	2,546	56.0	22,012	—	—
2005	2,577	57.1	22,161	—	—
		Low alternative projections			
1995	2,383	46.3	19,443	49.5	20,766
1996	2,431	46.9	19,305	52.6	21,637
1997	2,382	47.6	19,987	56.1	23,562
1998	2,390	48.6	20,331	60.3	25,222
1999	2,408	49.6	20,594	64.8	26,906
2000	2,439	50.6	20,738	—	—
2001	2,474	51.5	20,834	—	—
2002	2,504	52.4	20,946	—	—
2003	2,533	53.4	21,084	—	—
2004	2,546	54.3	21,331	—	—
2005	2,577	55.3	21,471	—	—
		High alternative projections			
1995	2,383	47.9	20,119	50.6	21,248
1996	2,431	49.2	20,257	53.5	22,012
1997	2,382	50.1	21,022	55.9	23,480
1998	2,390	51.1	21,397	58.8	24,601
1999	2,408	52.3	21,699	61.9	25,721
2000	2,439	53.4	21,891	—	—
2001	2,474	54.5	22,025	—	—
2002	2,504	55.5	22,161	—	—
2003	2,533	56.5	22,299	—	—
2004	2,546	57.5	22,579	—	—
2005	2,577	58.6	22,758	—	—

[1] Based on the Consumer Price Index for all urban consumers, Bureau of Labor Statistics, U.S. Department of Labor.

[2] Projected.

—Projections in current dollars are not shown after 1999 due to the uncertain behavior of inflation over the long term.

SOURCE: U.S. Department of Education, National Center for Education Statistics, "Financial Statistics of Institutions of Higher Education," and "Fall Enrollment in Colleges and Universities" surveys. (This table was prepared September 1994.)

State-Level Projections

Map of the United States, by region

Chapter 8

Public Elementary and Secondary Enrollment

Public elementary and secondary school enrollment is projected to rise between 1993 and the year 2005, but growth will vary widely across the Nation (table 45 and figure 62). Enrollment will increase most rapidly in the Western and Southern regions, where public school enrollment is expected to rise 26 percent and 15 percent, respectively. An increase of 9 percent is projected for the Northeastern region, while a smaller increase of 7 percent is expected in the Midwestern region (table 46 and figure 63).

Public school enrollment in kindergarten through grade 8 is expected to increase by 11 percent between 1993 and 2005 (table 47 and figure 64). Elementary enrollment is projected to grow by 21 percent in the West and by 11 percent in the South. Smaller increases are expected for the Northeast and Midwest, 5 percent and 3 percent, respectively (table 48 and figure 65).

While public high school enrollment (grades 9 through 12) decreased during the latter half of the 1980s, it is expected to increase by 25 percent between 1993 and 2005 (table 49 and figure 66). During the mid 1990s and beyond, the high school enrollment decreases of the 1980s are expected to reverse as larger numbers of students enter the high school grades. This expected increase reflects the changes in the high school age group that will occur during the 1990s and beyond, rather than shifts in the graduation rate from public high schools. Public high school enrollment in the West is expected to rise by 39 percent between 1993 and 2005, while enrollment in the South will increase by 24 percent. Increases in public high school enrollment have been projected for the Northeast and Midwest between 1993 and 2005, 21 percent and 15 percent, respectively (table 50 and figure 67).

Public School Enrollment

Between 1993 and the year 2005, public school enrollment is expected to increase, but growth will vary across the Nation. The Northeast will have enrollment increases in most states. The most notable increase will occur in New Jersey (20 percent). Smaller increases will occur in Connecticut (10 percent), Massachusetts (8 percent), New Hampshire (7 percent), New York (10 percent), Pennsylvania (5 Percent), Rhode Island (6 percent), and Vermont (5 percent). Maine is projected to show a decrease of 3 percent. Over the projection period, enrollment will grow between 1993 and 1999, while enrollment in most states will decline between 1999 and 2005.

In the Midwest, enrollment changes will vary across the region between 1993 and 2005. Increases are projected for Illinois (11 percent), Indiana (10 percent), Kansas (9 percent), Michigan (10 percent), and South Dakota (7 percent). Smaller increases are expected for Minnesota (4 percent), Missouri (4 percent), Nebraska (4 percent), Ohio (5 percent), and Wisconsin (4 percent). Decreases are projected for Iowa (0.3 percent) and North Dakota (5 percent). Most of the growth in the states will occur between 1993 and 1999.

Enrollment increases are projected for many of the Southern states between 1993 and 2005. Increases are projected for Alabama (18 percent), Florida (17 percent), Georgia (19 percent), Maryland (24 percent), South Carolina (14 percent), North Carolina (21 percent), Tennessee (13 percent), Texas (17 percent), and Virginia (20 percent). Smaller increases are expected for Arkansas (8 percent), Kentucky (5 percent), Louisiana (4 percent), Mississippi (3 percent), and Oklahoma (5 percent). Decreases in enrollment have been projected for District of Columbia (9 percent) and West Virginia (1 percent). Most of the growth in the states will occur between 1993 and 1999.

All of the states in the West are expected to show increases in enrollment between 1993 and the year 2005. Increases are expected in Alaska (25 percent), Arizona (24 percent), California (30 percent), Idaho (19 percent), Hawaii (30 percent), Nevada ((29 percent), New Mexico (25 percent), Oregon (20 percent), and Washington (25 percent) over the projection period. Smaller increases are expected in Montana (7 percent) and Wyoming (9 percent). Of the states in which enrollment is projected to increase between 1993 and 2005, enrollment will increase more during the 1993–99 period and then increase at a slower rate during the 1999–2005 period.

Elementary Enrollment

Between 1993 and 2005, public elementary school enrollment in kindergarten through grade 8 (K–8) is expected to increase 11 percent. Increases in elementary enrollment are expected to occur in most states across the Nation. These expected increases in elementary enrollment are a reflection of immigration and the rising number of births beginning in 1977, rather than changes in the attendance

rates of young children. The NCES projections do not account for enrollment increases that may be caused by changing state and local policies about the provision of prekindergarten and kindergarten programs. Expansion of these programs would lead to higher enrollments at the elementary school level.

Elementary enrollment is expected to show an increase of 5 percent in the Northeast between 1993 and 2005. Increases are projected for Connecticut (6 percent), New Jersey (17 percent), New York (6 percent), and Pennsylvania (1 percent). Decreases are projected in Maine (8 percent), New Hampshire (2 percent), Rhode Island (1 percent), and Vermont (1 percent). Between 1993 and 1999, enrollment will increase in most states, while enrollment is projected to decrease between 1999 and 2005.

A more modest increase in elementary enrollment has been projected for the Midwestern region. Between 1993 and 2005, enrollment in the Midwest is projected to increase by 3 percent. Increases are expected in Illinois (8 percent), Indiana (8 percent), and Michigan (7 percent). Smaller increases are projected for Kansas (4 percent), Ohio (2 percent), and South Dakota (3 percent). Four states are projected to show decreases. These will occur in Iowa (4 percent), Minnesota (2 percent), North Dakota (10 percent), and Wisconsin (2 percent). Most of the growth in the states will occur between 1993 and 1999.

An increase of 1.3 million students is expected for the Southern region between 1993 and 2005, resulting in an increase of 11 percent. Increases are expected in Alabama (18 percent), Delaware (13 percent), Florida (11 percent), Georgia (16 percent), Maryland (19 percent), North Carolina (16 percent), South Carolina (11 percent), Tennessee (10 percent), Texas (14 percent), and Virginia (15 percent). Smaller increases are projected for Arkansas (6 percent), Kentucky (5 percent), Louisiana (2 percent), and Mississippi (3 percent). A sizable decrease is projected for District of Columbia (17 percent). Most of the growth in the states will occur between 1993 and 1999.

Elementary enrollment in the Western states is expected to rise between 1993 and 2005, an increase of 21 percent. This amounts to an increase of about 1.5 million students, more than 60 percent of which will be in California. Over the projection period, large enrollment increases are anticipated for Alaska (19 percent), Arizona (19 percent), California (25 percent), Hawaii (29 percent), Nevada (21 percent), and New Mexico (21 percent). Other enrollment increases are projected for Colorado (11 percent), Idaho (18 percent), Oregon (16 percent), Utah (15 percent), and Washington (19 percent). Smaller increases are projected for Montana (4 percent) and Wyoming (7 percent). Most of the growth in the states will occur between 1993 and 1999.

High School Enrollment

Between 1993 and 2005, enrollment in public high schools (grades 9 through 12) is expected to increase by 25 percent, reversing its decline during the 1980s. Over the projection period, enrollment increases are projected in all of the regions.

Between 1987 and 1993, high school enrollment in the Northeast declined by 7 percent. Over the projection period, it will increase by 11 percent between 1993 and 1999, and then increase another 9 percent between 1999 and 2005. Between 1993 and 2005, increases are projected in all states in the Northeast, reversing declines in these states during the late 1980s. Increases are expected in Connecticut (21 percent), Massachusetts (29 percent), New Hampshire (31 percent), New Jersey (28 percent), New York (19 percent), Pennsylvania (17 percent), Rhode Island (26 percent), and Vermont (23 percent). Most of the growth in the states will occur between 1993 and 1999.

The Midwestern region is expected to show an increase of 15 percent in high school enrollment between 1993 and 2005. Increases are projected for all of the states, reversing the declines that occurred in the late 1980s. Increases are expected in Illinois (16 percent), Indiana (14 percent), Kansas (20 percent), Michigan (17 percent), Minnesota (20 percent), Missouri (15 percent), Nebraska (15 percent), Ohio (14 percent), South Dakota (16 percent), and Wisconsin (17 percent). Smaller increases are projected in Iowa (8 percent) and North Dakota (7 percent). During the projection period, all of the states are projected to increase between 1993 and 1999, while four of the states will decline between 1999 and 2005.

Between 1993 and 2005, public high school enrollment in the South is projected to increase by 24 percent. This increase will reverse the declines of the late 1980s. Over the projection period, increases are expected in Delaware (31 percent), Florida (36 percent), Georgia (29 percent), Maryland (38 percent), North Carolina (33 percent), Texas (25 percent), and Virginia (35 percent). Other increases are expected for Alabama (17 percent), District of Columbia (19 percent), Oklahoma (16 percent), South Carolina (21 percent), and Tennessee (22 percent). Smaller increases are projected for Arkansas (14 percent), Kentucky (5 percent), Louisiana (8 percent), and Mississippi (6 percent). West Virginia will decline by 5 percent. During the first half of the projection period (1993 to 1999), most states in the region except West Virginia are projected to reverse their enrollment declines from the late 1980s. Between 1999 and 2005, this growth will continue for most states.

The Western region's public high school enrollment is expected to rise by more than 1 million or 39 percent between 1993 and 2005. Between 1993 and 2005 particularly large increases have been projected for Alaska (40 percent), Arizona (36 percent), California (44 percent), Colorado (37 percent), Hawaii (31 percent), Nevada (51 percent), New Mexico (33 percent), Oregon (28 percent), and Washington (41 percent). Smaller increases are expected for Idaho (20 percent), Montana (14 percent), Utah (16 percent), and Wyoming (14 percent). Most of the growth in the states will occur between 1993 and 1999.

Figure 62
Percent change in grades K-12 enrollment in public schools, by state: Fall 1993 to fall 2005

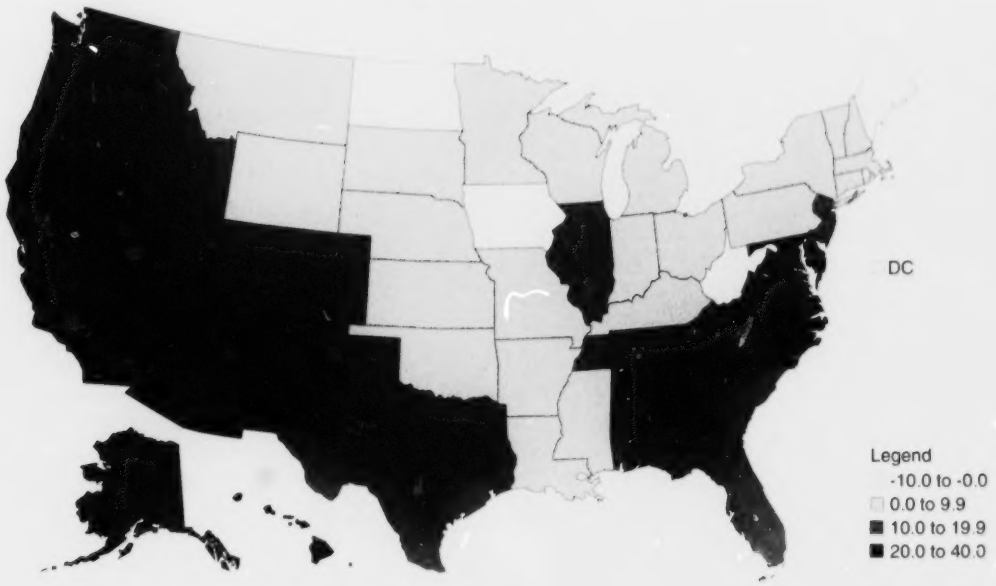

Figure 63
Percent change in public K-12 enrollment, by region: Fall 1993 to fall 2005

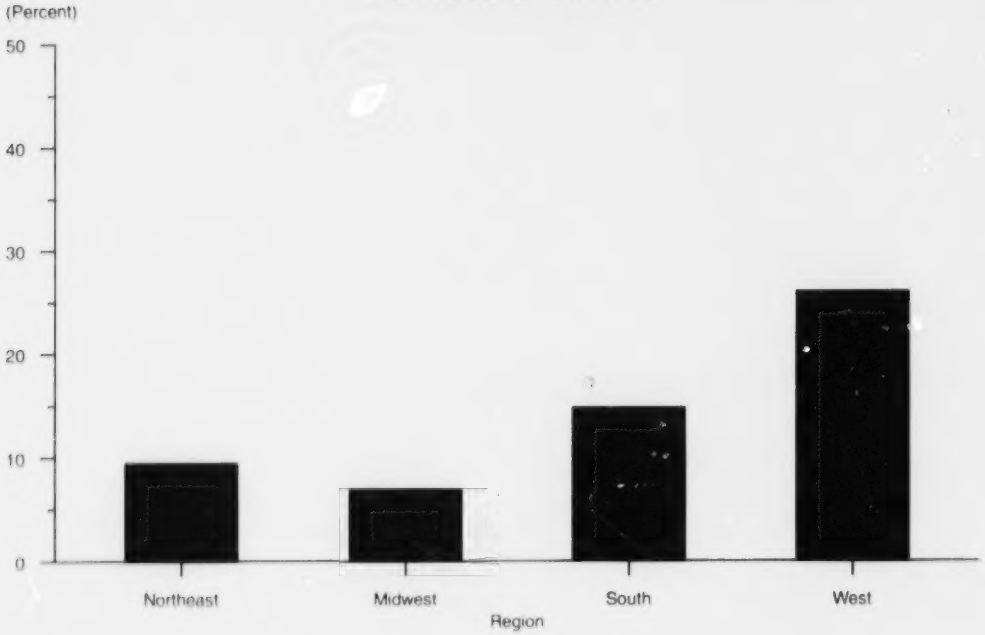

Figure 64
Percent change in grades K-8 enrollment in public schools, by state: Fall 1993 to fall 2005

Figure 65
Percent change in public K-8 enrollment, by region: Fall 1993 to fall 2005

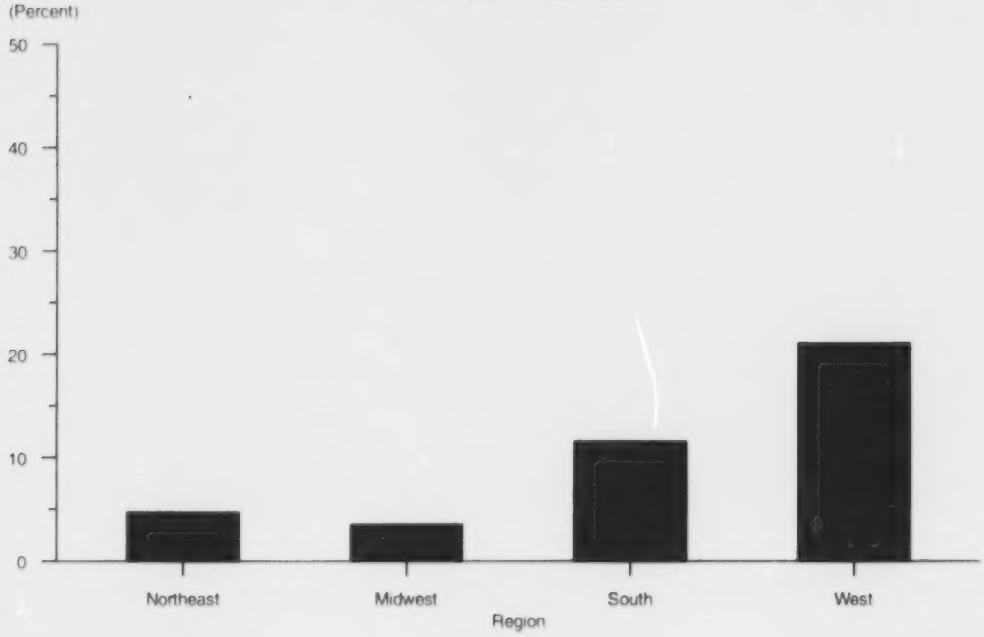

Figure 66
Percent change in grades 9-12 enrollment in public schools, by state: Fall 1993 to fall 2005

Figure 67
Percent change in public 9-12 enrollment, by region: Fall 1993 to fall 2005

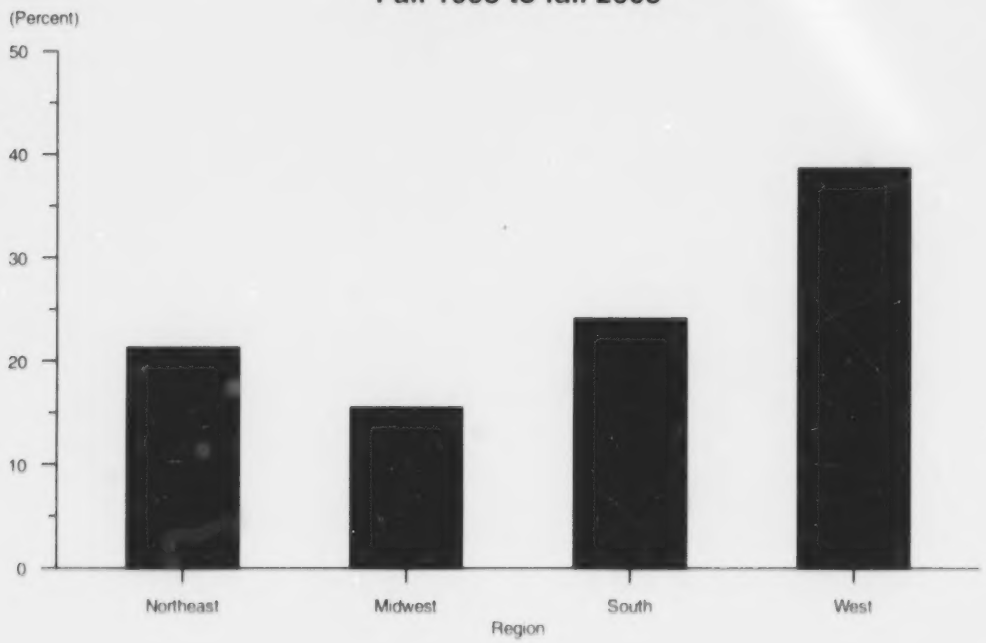

Table 45.—Enrollment in grades K–12 in public elementary and secondary schools, by region and state, with projections: Fall 1987 to fall 2005

(In thousands)

Region and state	Actual						Estimate	Projected		
	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
United States	40,008	40,189	40,543	41,217	42,047	42,734	43,353	44,238	45,037	45,961
Northeast	7,252	7,208	7,200	7,282	7,407	7,526	7,654	7,797	7,925	8,067
Connecticut	465	461	462	469	481	488	500	511	519	527
Maine	212	213	214	215	216	216	218	220	221	221
Massachusetts	825	823	826	834	846	860	874	892	909	927
New Hampshire	166	169	172	173	177	181	186	191	194	197
New Jersey	1,093	1,081	1,076	1,090	1,110	1,130	1,147	1,173	1,198	1,229
New York	2,594	2,574	2,566	2,598	2,644	2,690	2,724	2,771	2,815	2,866
Pennsylvania	1,669	1,660	1,655	1,668	1,693	1,718	1,757	1,789	1,815	1,841
Rhode Island	135	134	136	139	142	144	146	149	152	154
Vermont	93	93	95	96	97	99	100	101	102	103
Midwest	9,870	9,846	9,849	9,944	10,080	10,199	10,283	10,422	10,536	10,669
Illinois	1,811	1,795	1,797	1,821	1,848	1,874	1,888	1,913	1,938	1,972
Indiana	964	961	954	955	957	961	965	974	982	993
Iowa	481	478	478	484	491	495	499	504	507	510
Kansas	421	427	431	437	445	452	457	465	470	475
Michigan	1,589	1,583	1,577	1,584	1,594	1,604	1,619	1,640	1,662	1,685
Minnesota	721	727	740	756	774	794	810	828	841	852
Missouri	802	807	808	817	843	859	860	872	880	889
Nebraska	268	269	271	274	280	282	284	288	290	293
North Dakota	119	119	118	118	118	119	118	118	118	117
Ohio	1,793	1,779	1,764	1,771	1,784	1,796	1,796	1,814	1,828	1,848
South Dakota	127	127	127	129	132	135	136	138	139	141
Wisconsin	772	775	783	798	815	829	849	868	881	893
South	14,419	14,491	14,605	14,807	15,081	15,327	15,504	15,790	16,059	16,379
Alabama	729	725	724	722	722	723	723	729	736	746
Arkansas	437	436	435	436	439	441	443	447	450	456
Delaware	96	97	98	100	102	104	107	109	112	115
District of Columbia	86	85	81	81	81	81	79	78	77	77
Florida	1,665	1,721	1,790	1,862	1,932	1,981	2,043	2,114	2,181	2,250
Georgia	1,111	1,108	1,127	1,152	1,178	1,207	1,233	1,264	1,294	1,325
Kentucky	643	638	631	636	646	655	653	656	658	662
Louisiana	793	787	783	785	794	798	785	785	785	788
Maryland	684	689	699	715	736	752	769	792	814	839
Mississippi	506	503	502	502	504	507	500	501	502	504
North Carolina	1,086	1,083	1,081	1,087	1,098	1,114	1,126	1,151	1,177	1,207
Oklahoma	584	580	579	579	588	597	602	609	613	619
South Carolina	615	616	616	622	627	633	638	648	657	668
Tennessee	824	822	820	825	834	846	853	867	879	895
Texas	3,237	3,284	3,329	3,383	3,464	3,536	3,582	3,650	3,713	3,789
Virginia	979	982	985	999	1,016	1,032	1,053	1,078	1,102	1,133
West Virginia	344	336	328	322	320	318	314	311	308	307
West	8,468	8,644	8,889	9,184	9,479	9,683	9,913	10,229	10,518	10,847
Alaska	106	106	109	114	119	122	125	130	134	138
Arizona	572	575	608	640	657	673	694	719	741	765
California	4,489	4,618	4,772	4,950	5,107	5,196	5,330	5,512	5,688	5,893
Colorado	560	560	563	574	593	613	625	644	660	678
Hawaii	166	167	169	172	175	177	179	183	187	193
Idaho	212	215	215	221	226	232	234	239	242	246
Montana	152	152	151	153	156	160	162	164	166	167
Nevada	168	176	187	201	212	223	234	247	258	269
New Mexico	287	292	296	302	309	316	319	327	334	343
Oregon	456	462	472	472	499	510	520	534	546	557
Utah	423	431	439	447	456	464	467	474	477	483
Washington	776	791	810	840	869	896	922	956	984	1,014
Wyoming	98	98	97	98	102	100	100	101	101	101

Table 45.—Enrollment in grades K–12 in public elementary and secondary schools, by region and state, with projections: Fall 1987 to fall 2005—Continued

(In thousands)

Region and state	Projected								
	1997	1998	1999	2000	2001	2002	2003	2004	2005
United States	46,797	47,403	47,911	48,324	48,683	48,993	49,225	49,471	49,651
Northeast	8,196	8,274	8,328	8,361	8,381	8,387	8,390	8,390	8,372
Connecticut	535	541	544	547	548	548	548	549	548
Maine	221	221	220	218	217	216	214	214	213
Massachusetts	945	952	957	959	960	958	955	950	944
New Hampshire	200	201	201	200	200	199	199	199	198
New Jersey	1,259	1,283	1,304	1,322	1,337	1,350	1,359	1,368	1,371
New York	2,911	2,939	2,960	2,973	2,981	2,985	2,987	2,989	2,985
Pennsylvania	1,864	1,875	1,881	1,880	1,876	1,869	1,866	1,862	1,854
Rhode Island	156	157	157	157	157	156	156	156	155
Vermont	104	104	105	105	105	105	105	105	104
Midwest	10,787	10,853	10,906	10,942	10,969	10,989	10,986	10,991	10,987
Illinois	2,001	2,019	2,036	2,050	2,061	2,070	2,076	2,083	2,088
Indiana	1,007	1,016	1,025	1,034	1,044	1,053	1,056	1,059	1,060
Iowa	512	511	509	507	505	503	501	499	497
Kansas	480	484	487	489	491	493	494	495	497
Michigan	1,704	1,722	1,737	1,748	1,757	1,765	1,769	1,773	1,775
Minnesota	861	864	864	862	858	854	850	847	844
Missouri	897	900	902	902	902	901	900	899	899
Nebraska	295	296	297	297	297	297	297	296	296
North Dakota	117	116	115	114	114	114	113	113	112
Ohio	1,868	1,878	1,886	1,892	1,898	1,903	1,899	1,897	1,892
South Dakota	143	143	144	144	145	145	145	145	145
Wisconsin	902	904	904	901	897	892	888	885	881
South	16,672	16,895	17,086	17,253	17,401	17,534	17,629	17,724	17,794
Alabama	758	772	786	801	816	830	838	845	851
Arkansas	461	464	467	470	473	476	477	479	480
Delaware	118	119	121	122	124	124	125	126	126
District of Columbia	75	74	73	72	72	73	72	72	72
Florida	2,304	2,338	2,362	2,375	2,380	2,380	2,388	2,397	2,401
Georgia	1,353	1,376	1,395	1,413	1,428	1,442	1,453	1,464	1,471
Kentucky	666	669	672	675	677	680	681	683	684
Louisiana	791	794	796	799	803	808	809	812	815
Maryland	862	882	898	912	924	934	942	948	953
Mississippi	506	507	508	509	512	514	515	516	517
North Carolina	1,238	1,263	1,287	1,308	1,326	1,342	1,350	1,357	1,359
Oklahoma	625	626	626	625	625	626	626	628	630
South Carolina	679	687	695	702	709	715	719	723	726
Tennessee	911	923	932	941	950	957	960	962	963
Texas	3,857	3,911	3,960	4,002	4,042	4,080	4,112	4,146	4,175
Virginia	1,161	1,183	1,202	1,218	1,232	1,243	1,251	1,257	1,261
West Virginia	307	306	307	307	308	309	309	309	309
West	11,143	11,382	11,591	11,768	11,933	12,083	12,220	12,365	12,497
Alaska	142	145	148	150	152	153	154	156	157
Arizona	787	803	816	826	835	841	848	854	858
California	6,074	6,221	6,348	6,458	6,560	6,654	6,745	6,843	6,934
Colorado	695	706	716	724	730	734	737	739	739
Hawaii	197	203	208	212	217	221	225	228	232
Idaho	250	254	258	262	266	270	273	276	278
Montana	169	170	171	171	172	172	173	173	174
Nevada	278	285	291	294	296	297	299	301	302
New Mexico	352	360	366	373	379	384	388	393	397
Oregon	568	578	586	593	599	605	611	617	623
Utah	487	492	497	503	510	517	524	531	538
Washington	1,042	1,064	1,084	1,100	1,115	1,127	1,137	1,148	1,157
Wyoming	101	102	102	103	104	106	106	108	109

NOTE: Includes most kindergarten and some nursery school enrollment.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Common Core of Data Surveys and "Public Elementary and Secondary Education Statistics: School Year 1993–94," *Early Estimates*. (This table was prepared August 1994.)

Table 46.—Percent change in grades K–12 enrollment in public schools, by region and state, with projections: Fall 1987 to fall 2005

Region and state	Actual	Projected		
	1987 to 1993	1993 to 1999	1999 to 2005	1993 to 2005
United States	8.4	10.5	3.6	14.5
Northeast	5.5	8.8	0.5	9.4
Connecticut	7.5	8.9	0.6	9.6
Maine	3.0	0.7	-3.2	-2.5
Massachusetts	5.9	9.5	-1.4	8.0
New Hampshire	12.0	7.9	-1.2	6.6
New Jersey	5.0	13.6	5.2	19.5
New York	5.0	8.6	0.9	9.6
Pennsylvania	5.3	7.0	-1.5	5.5
Rhode Island	8.7	7.4	-1.4	5.9
Vermont	7.4	5.4	-0.5	4.9
Midwest	4.2	6.1	0.7	6.9
Illinois	4.2	7.8	2.6	10.6
Indiana	0.1	6.3	3.4	9.9
Iowa	3.7	2.1	-2.4	-0.3
Kansas	8.6	6.5	2.0	8.6
Michigan	1.9	7.3	2.2	9.7
Minnesota	12.3	6.6	-2.4	4.1
Missouri	7.3	4.8	-0.3	4.5
Nebraska	5.9	4.5	-0.2	4.3
North Dakota	-0.9	-2.7	-2.4	-5.0
Ohio	0.2	5.0	0.3	5.3
South Dakota	7.4	5.7	0.9	6.7
Wisconsin	10.0	6.4	-2.5	3.7
South	7.5	10.2	4.1	14.8
Alabama	-0.9	8.8	8.3	17.8
Arkansas	1.4	5.3	2.7	8.2
Delaware	11.5	13.5	4.2	18.2
District of Columbia	-8.6	-7.7	-1.0	-8.6
Florida	22.7	15.6	1.7	17.5
Georgia	10.9	13.2	5.5	19.4
Kentucky	1.5	3.0	1.7	4.7
Louisiana	-1.0	1.4	2.4	3.8
Maryland	12.5	16.8	6.1	23.9
Mississippi	-1.0	1.5	1.9	3.3
North Carolina	3.7	14.2	5.6	20.7
Oklahoma	3.1	4.0	0.6	4.6
South Carolina	3.8	8.9	4.5	13.7
Tennessee	3.6	9.3	3.3	12.9
Texas	10.7	10.5	5.5	16.6
Virginia	7.5	14.1	4.9	19.8
West Virginia	-8.8	-2.3	0.8	-1.5
West	17.1	16.9	7.8	26.1
Alaska	18.5	18.0	5.9	25.0
Arizona	21.3	17.5	5.2	23.6
California	18.7	19.1	9.2	30.1
Colorado	11.6	14.6	3.2	18.3
Hawaii	7.9	15.8	11.9	29.6
Idaho	10.2	10.3	7.6	18.6
Montana	6.4	5.4	1.8	7.3
Nevada	39.2	24.0	3.9	28.9
New Mexico	10.9	15.0	8.3	24.6
Oregon	14.2	12.6	6.3	19.6
Utah	10.4	6.4	8.2	15.2
Washington	18.8	17.6	6.7	25.5
Wyoming	1.7	2.0	6.8	9.0

NOTE: Includes most kindergarten and some nursery school enrollment.

SOURCE: US Department of Education, National Center for Education Statistics, Common Core of Data surveys and "Public Elementary and Secondary Education Statistics: School Year 1993–94," *Early Estimates*. (This table was prepared August 1994.)

Table 47.—Enrollment in grades K–8 in public schools, by region and state, with projections: Fall 1987 to fall 2005

(In thousands)

Region and state	Actual						Estimate	Projected		
	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
United States	27,931	28,499	29,152	29,878	30,506	30,996	31,372	31,849	32,293	32,863
Northeast	4,903	4,985	5,077	5,189	5,293	5,387	5,475	5,574	5,657	5,753
Connecticut	326	332	338	347	355	362	371	379	385	391
Maine	145	149	152	155	157	156	158	158	158	158
Massachusetts	565	578	590	604	616	630	642	655	667	678
New Hampshire	114	120	124	126	130	133	137	140	141	142
New Jersey	747	755	766	784	801	817	831	852	873	898
New York	1,734	1,758	1,790	1,828	1,862	1,893	1,915	1,949	1,979	2,017
Pennsylvania	1,112	1,132	1,148	1,172	1,195	1,216	1,240	1,257	1,270	1,283
Rhode Island	94	95	98	102	104	106	108	110	111	112
Vermont	65	67	69	71	73	74	74	75	75	75
Midwest	6,793	6,894	6,997	7,130	7,245	7,310	7,334	7,374	7,414	7,480
Illinois	1,252	1,259	1,280	1,310	1,328	1,345	1,347	1,357	1,373	1,400
Indiana	659	668	671	676	676	677	677	678	680	686
Iowa	328	334	338	345	348	349	349	348	346	345
Kansas	299	307	314	320	325	328	330	332	332	333
Michigan	1,097	1,114	1,128	1,145	1,159	1,165	1,176	1,188	1,201	1,214
Minnesota	497	511	529	546	557	569	577	583	586	587
Missouri	557	568	576	588	612	622	617	620	624	628
Nebraska	188	191	194	198	201	203	202	202	202	203
North Dakota	84	85	85	85	85	85	84	83	81	80
Ohio	1,220	1,229	1,239	1,258	1,277	1,282	1,278	1,282	1,285	1,295
South Dakota	91	93	94	95	96	98	98	98	98	99
Wisconsin	522	535	549	566	580	588	599	604	606	610
South	10,245	10,413	10,617	10,859	11,068	11,257	11,348	11,506	11,657	11,864
Alabama	521	522	526	527	526	527	524	525	530	539
Arkansas	307	309	311	314	315	318	317	317	318	322
Delaware	67	69	71	73	75	76	77	79	80	82
District of Columbia	63	62	61	61	61	61	59	58	58	57
Florida	1,172	1,232	1,303	1,370	1,428	1,470	1,518	1,569	1,611	1,651
Georgia	795	808	828	849	868	892	907	925	942	964
Kentucky	449	452	452	459	466	470	464	463	463	465
Louisiana	583	581	582	586	591	591	576	573	570	570
Maryland	473	489	507	527	543	556	567	582	597	613
Mississippi	364	368	370	372	370	370	363	360	358	359
North Carolina	754	761	770	783	795	811	820	838	857	881
Oklahoma	411	414	421	425	432	439	439	440	440	441
South Carolina	432	438	444	452	456	460	462	466	472	480
Tennessee	582	586	590	598	605	612	616	625	633	644
Texas	2,351	2,392	2,443	2,511	2,575	2,629	2,649	2,682	2,712	2,758
Virginia	685	699	712	728	741	758	774	791	808	828
West Virginia	237	232	227	224	222	219	215	212	210	210
West	5,990	6,207	6,461	6,700	6,900	7,042	7,215	7,395	7,564	7,767
Alaska	78	79	82	85	89	92	93	96	98	101
Arizona	413	418	451	479	490	498	512	526	540	556
California	3,171	3,317	3,470	3,615	3,720	3,791	3,909	4,025	4,136	4,272
Colorado	392	400	408	420	436	451	459	469	476	484
Hawaii	118	120	123	123	127	129	130	132	135	138
Idaho	153	156	157	160	161	165	164	166	167	169
Montana	108	110	110	111	113	115	116	116	116	116
Nevada	119	127	137	150	158	165	174	181	188	194
New Mexico	195	200	203	208	213	217	219	223	226	232
Oregon	318	328	340	340	359	365	371	379	385	391
Utah	314	319	324	325	327	330	328	327	327	328
Washington	541	563	586	613	633	652	667	684	700	715
Wyoming	70	70	70	71	74	72	71	70	69	69

Table 47.—Enrollment in grades K–8 in public schools, by region and state, with projections: Fall 1987 to fall 2005—Continued

(In thousands)

Region and state	Projected								
	1997	1998	1999	2000	2001	2002	2003	2004	2005
United States	33,420	33,825	34,133	34,452	34,681	34,856	34,963	34,931	34,703
Northeast	5,844	5,889	5,910	5,926	5,920	5,900	5,871	5,819	5,735
Connecticut	397	400	402	403	402	401	399	396	392
Maine	157	155	153	152	150	149	148	147	146
Massachusetts	690	691	689	687	683	676	668	657	644
New Hampshire	142	142	141	140	139	138	137	135	134
New Jersey	925	944	959	971	979	983	984	980	969
New York	2,050	2,068	2,079	2,087	2,088	2,083	2,074	2,055	2,024
Pennsylvania	1,296	1,301	1,301	1,299	1,293	1,285	1,278	1,266	1,248
Rhode Island	113	113	112	112	111	110	109	108	106
Vermont	75	75	75	75	75	74	74	74	73
Midwest	7,555	7,600	7,624	7,656	7,676	7,689	7,686	7,655	7,588
Illinois	1,427	1,441	1,451	1,463	1,472	1,477	1,480	1,475	1,460
Indiana	697	707	715	725	732	738	740	739	733
Iowa	345	344	343	342	342	341	340	338	335
Kansas	334	336	338	340	342	344	345	346	345
Michigan	1,228	1,242	1,250	1,260	1,266	1,270	1,272	1,268	1,259
Minnesota	588	587	584	582	579	576	573	570	565
Missouri	631	631	630	629	629	628	627	625	619
Nebraska	204	204	204	204	204	205	204	204	202
North Dakota	79	78	77	76	76	76	76	75	75
Ohio	1,311	1,319	1,323	1,329	1,331	1,332	1,328	1,320	1,304
South Dakota	100	100	100	101	101	102	102	102	101
Wisconsin	612	612	609	606	603	601	599	595	589
South	12,063	12,221	12,349	12,484	12,588	12,672	12,725	12,724	12,649
Alabama	550	563	577	590	602	612	618	621	620
Arkansas	325	328	331	334	336	339	340	339	336
Delaware	84	85	86	87	88	88	89	88	87
District of Columbia	55	54	52	51	51	51	50	50	49
Florida	1,681	1,697	1,705	1,713	1,714	1,711	1,711	1,704	1,688
Georgia	985	1,004	1,019	1,034	1,045	1,052	1,058	1,057	1,051
Kentucky	469	473	477	482	485	488	489	489	485
Louisiana	572	573	574	577	581	586	589	591	590
Maryland	628	642	654	664	672	677	680	679	674
Mississippi	362	364	365	368	372	375	376	375	372
North Carolina	905	923	938	952	962	967	968	963	952
Oklahoma	442	441	440	440	441	443	443	443	441
South Carolina	489	496	502	508	513	517	519	517	513
Tennessee	657	665	671	678	683	685	685	683	675
Texas	2,801	2,839	2,872	2,908	2,938	2,968	2,995	3,013	3,012
Virginia	848	862	873	883	890	894	896	894	887
West Virginia	211	212	214	215	216	218	218	217	215
West	7,958	8,115	8,250	8,386	8,497	8,596	8,682	8,733	8,731
Alaska	104	105	107	108	110	111	111	112	111
Arizona	572	584	593	601	607	611	614	614	610
California	4,393	4,491	4,572	4,654	4,720	4,778	4,833	4,866	4,868
Colorado	493	498	503	507	510	512	514	513	510
Hawaii	142	146	150	153	157	161	163	166	167
Idaho	172	175	178	183	186	190	192	193	194
Montana	117	117	118	119	119	120	121	121	121
Nevada	199	203	206	208	209	209	210	210	209
New Mexico	237	242	247	252	256	260	263	265	265
Oregon	397	403	408	413	418	423	427	429	430
Utah	332	337	342	349	356	362	368	372	376
Washington	732	745	757	768	778	786	792	796	795
Wyoming	69	69	69	70	72	73	74	75	76

NOTE: Includes most kindergarten and some nursery school enrollment.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Common Core of Data Surveys and "Public Elementary and Secondary Education Statistics: School Year 1993–94," *Early Estimates*. (This table was prepared August 1994.)

Table 48.—Percent change in grades K–8 enrollment in public schools, by region and state, with projections: Fall 1987 to fall 2005

Region and state	Actual	Projected		
	1987 to 1993	1993 to 1999	1999 to 2005	1993 to 2005
United States	12.3	8.8	1.7	10.6
Northeast	11.7	7.9	-3.0	4.7
Connecticut	13.7	8.3	-2.6	5.5
Maine	8.4	-2.8	-5.0	-7.6
Massachusetts	13.6	7.4	-6.6	0.3
New Hampshire	19.9	2.9	-4.8	-2.1
New Jersey	11.2	15.4	1.0	16.6
New York	10.4	8.5	-2.6	5.7
Pennsylvania	11.5	4.9	-4.1	0.6
Rhode Island	15.1	4.3	-5.3	-1.2
Vermont	13.9	0.9	-2.0	-1.1
Midwest	8.0	4.0	-0.5	3.5
Illinois	7.6	7.8	0.6	8.4
Indiana	2.8	5.7	2.4	8.2
Iowa	6.1	-1.7	-2.3	-3.9
Kansas	10.7	2.2	2.2	4.5
Michigan	7.2	6.3	0.7	7.0
Minnesota	16.3	1.1	-3.2	-2.1
Missouri	10.7	2.2	-1.7	0.4
Nebraska	7.5	0.6	-0.6	0.1
North Dakota	-1.0	-8.1	-2.2	-10.1
Ohio	4.8	3.5	-1.4	2.0
South Dakota	7.3	2.3	0.8	3.1
Wisconsin	14.8	1.7	-3.2	-1.6
South	10.8	8.8	2.4	11.5
Alabama	0.6	10.0	7.5	18.3
Arkansas	3.2	4.3	1.8	6.1
Delaware	15.7	11.4	1.8	13.4
District of Columbia	-5.6	-11.9	-6.3	-17.5
Florida	29.6	12.3	-1.0	11.2
Georgia	14.1	12.4	3.1	15.9
Kentucky	3.3	2.8	1.7	4.6
Louisiana	-1.1	-0.4	2.8	2.3
Maryland	19.9	15.3	3.2	18.9
Mississippi	-0.3	0.7	1.9	2.6
North Carolina	8.8	14.4	1.5	16.2
Oklahoma	6.7	0.3	0.2	0.5
South Carolina	7.0	8.7	2.3	11.2
Tennessee	5.8	8.9	0.6	9.5
Texas	12.7	8.4	4.9	13.7
Virginia	13.0	12.7	1.6	14.5
West Virginia	-9.2	-0.7	0.7	0.0
West	20.4	14.3	5.8	21.0
Alaska	19.8	14.5	4.1	19.3
Arizona	24.2	15.6	2.9	19.0
California	23.3	17.0	6.5	24.5
Colorado	17.2	9.5	1.4	11.0
Hawaii	10.6	15.1	11.7	28.6
Idaho	7.2	8.5	8.6	17.8
Montana	7.5	1.4	2.8	4.2
Nevada	45.8	18.6	1.7	20.6
New Mexico	12.3	12.6	7.1	20.6
Oregon	16.8	9.9	5.4	15.8
Utah	4.4	4.5	9.6	14.6
Washington	23.4	13.4	5.1	19.1
Wyoming	0.8	-2.2	9.3	6.8

NOTE: Includes most kindergarten and some nursery school enrollment.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Common Core of Data surveys and "Public Elementary and Secondary Education: School Year 1993–94," *Early Estimates*. (This table was prepared August 1994.)

Table 49.—Enrollment in grades 9–12 in public schools, by region and state, with projections: Fall 1987 to fall 2005

(In thousands)

Region and state	Actual						Estimate	Projected		
	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
United States	12,077	11,690	11,390	11,339	11,541	11,738	11,981	12,388	12,744	13,097
Northeast	2,349	2,223	2,124	2,092	2,114	2,139	2,175	2,222	2,267	2,313
Connecticut	139	129	123	122	126	127	129	132	134	137
Maine	66	64	62	60	60	60	60	61	62	64
Massachusetts	260	246	235	230	230	230	232	237	242	249
New Hampshire	52	50	47	46	47	48	49	51	53	56
New Jersey	346	326	310	306	309	313	316	321	325	331
New York	860	816	776	770	782	796	808	822	836	849
Pennsylvania	557	528	507	496	498	502	517	532	546	558
Rhode Island	41	38	37	37	38	38	39	40	41	42
Vermont	28	27	26	25	24	25	25	26	27	28
Midwest	3,077	2,952	2,852	2,814	2,835	2,888	2,943	3,048	3,122	3,189
Illinois	560	536	517	512	520	529	540	556	564	571
Indiana	305	293	283	279	281	283	288	297	302	307
Iowa	152	144	140	139	143	146	150	156	161	164
Kansas	123	120	117	117	120	123	127	133	138	142
Michigan	492	469	449	440	435	439	442	452	461	471
Minnesota	225	216	211	211	217	224	232	245	255	266
Missouri	245	239	232	228	231	238	243	251	256	261
Nebraska	80	78	77	76	78	80	81	85	88	90
North Dakota	35	34	33	33	33	34	35	36	36	37
Ohio	573	549	525	514	506	514	517	533	543	553
South Dakota	35	34	34	34	35	37	38	40	41	43
Wisconsin	251	240	234	232	235	241	250	265	275	284
South	4,174	4,078	3,988	3,948	4,013	4,070	4,148	4,284	4,401	4,515
Alabama	208	203	198	195	196	196	198	203	206	207
Arkansas	130	127	124	123	123	124	126	130	132	134
Delaware	29	28	27	27	28	28	29	31	32	33
District of Columbia	24	22	21	19	20	20	20	20	20	20
Florida	493	489	486	492	505	512	524	545	570	598
Georgia	316	300	298	303	309	316	325	339	351	361
Kentucky	194	186	179	177	180	185	188	193	195	196
Louisiana	210	206	201	199	203	207	209	212	215	217
Maryland	211	200	192	188	193	196	202	210	217	226
Mississippi	141	136	133	131	134	137	137	141	143	144
North Carolina	332	322	311	304	303	304	306	313	320	326
Oklahoma	173	167	158	154	156	158	163	169	173	178
South Carolina	183	178	172	170	171	173	176	182	185	189
Tennessee	241	236	230	226	229	233	236	242	247	251
Texas	886	892	885	872	889	907	931	968	1,002	1,030
Virginia	294	283	273	270	275	274	278	287	294	305
West Virginia	107	104	100	98	99	99	98	99	98	97
West	2,478	2,437	2,427	2,484	2,579	2,641	2,716	2,835	2,954	3,080
Alaska	29	28	28	29	30	31	32	34	36	37
Arizona	160	157	156	161	167	176	183	192	201	208
California	1,317	1,301	1,302	1,336	1,387	1,404	1,430	1,487	1,552	1,621
Colorado	168	160	155	154	157	161	167	175	184	194
Hawaii	49	47	46	49	48	49	50	51	52	54
Idaho	59	59	58	61	64	67	70	73	75	77
Montana	44	43	41	42	43	45	46	48	49	51
Nevada	49	49	49	51	54	58	61	66	70	75
New Mexico	92	92	93	94	96	98	100	104	108	111
Oregon	138	134	132	132	139	145	150	155	160	166
Utah	109	112	115	122	129	134	141	147	150	155
Washington	235	228	224	227	237	245	256	272	285	299
Wyoming	28	27	27	27	28	29	29	31	31	32

Table 49.—Enrollment in grades 9–12 in public schools, by region and state, with projections: Fall 1987 to fall 2005—Continued

(In thousands)

Region and state	Projected								
	1997	1998	1999	2000	2001	2002	2003	2004	2005
United States	13,377	13,578	13,778	13,871	14,003	14,138	14,262	14,539	14,948
Northeast	2,352	2,385	2,418	2,435	2,460	2,487	2,519	2,571	2,638
Connecticut	139	141	143	144	145	147	149	152	156
Maine	65	66	66	66	66	66	66	67	67
Massachusetts	255	261	268	272	277	283	287	293	300
New Hampshire	58	59	60	60	61	62	62	63	64
New Jersey	334	339	345	350	358	366	375	388	403
New York	861	871	881	885	893	902	913	934	961
Pennsylvania	568	574	580	582	583	584	588	595	606
Rhode Island	43	44	45	45	46	46	47	48	49
Vermont	29	30	30	30	31	31	31	31	31
Midwest	3,232	3,253	3,281	3,286	3,293	3,300	3,301	3,336	3,399
Illinois	574	578	584	587	590	593	597	609	629
Indiana	310	309	310	310	311	314	316	320	328
Iowa	167	166	166	165	163	162	161	161	162
Kansas	146	148	149	149	149	149	149	150	152
Michigan	476	481	487	488	491	494	496	505	517
Minnesota	273	277	280	280	280	278	277	277	279
Missouri	266	268	272	273	273	273	273	275	280
Nebraska	92	93	93	93	93	93	92	93	94
North Dakota	38	38	38	38	38	38	37	37	37
Ohio	558	558	562	563	567	571	571	577	587
South Dakota	43	43	44	44	44	44	43	44	44
Wisconsin	290	293	295	295	294	291	289	290	292
South	4,609	4,674	4,737	4,768	4,812	4,863	4,904	5,000	5,145
Alabama	209	209	210	211	214	218	220	224	232
Arkansas	135	136	136	136	137	137	138	140	143
Delaware	34	35	35	35	36	36	36	37	39
District of Columbia	20	20	21	21	21	22	22	23	23
Florida	623	642	657	662	666	669	677	693	713
Georgia	369	372	376	379	383	389	396	406	420
Kentucky	196	195	195	193	192	192	192	194	198
Louisiana	219	220	222	222	222	222	220	221	226
Maryland	233	239	245	248	253	257	262	269	279
Mississippi	144	144	142	141	140	139	139	141	145
North Carolina	333	340	348	356	365	375	383	394	407
Oklahoma	183	185	186	185	184	183	183	185	189
South Carolina	190	192	193	194	195	198	201	206	213
Tennessee	255	258	261	263	267	271	274	280	288
Texas	1,055	1,072	1,088	1,095	1,103	1,112	1,117	1,133	1,164
Virginia	313	321	329	335	342	349	354	363	375
West Virginia	96	94	93	92	91	92	91	92	94
West	3,185	3,266	3,341	3,382	3,436	3,488	3,538	3,632	3,766
Alaska	38	40	41	42	42	43	43	44	45
Arizona	215	219	223	225	228	230	234	240	249
California	1,681	1,730	1,776	1,804	1,840	1,876	1,913	1,976	2,066
Colorado	202	208	213	217	220	222	223	225	229
Hawaii	56	57	58	59	60	60	61	63	65
Idaho	79	79	80	80	80	81	81	82	84
Montana	52	53	53	53	52	52	52	52	53
Nevada	79	82	85	86	87	88	89	91	93
New Mexico	115	117	120	121	123	124	125	128	132
Oregon	171	175	178	179	181	182	184	188	193
Utah	155	155	155	153	154	155	156	159	163
Washington	310	319	327	332	337	341	345	352	362
Wyoming	32	33	33	33	32	32	32	33	33

SOURCE: U.S. Department of Education, National Center for Education Statistics, Common Core of Data Surveys and "Public Elementary and Secondary Education Statistics: School Year 1993–94," *Early Estimates*. (This table was prepared August 1994.)

Table 50.—Percent change in grades 9–12 enrollment in public schools, by region and state, with projections: Fall 1987 to fall 2005

Region and state	Actual	Projected		
	1987 to 1993	1993 to 1999	1999 to 2005	1993 to 2005
United States	-0.8	15.0	8.5	24.8
Northeast	-7.4	11.2	9.1	21.3
Connecticut	-7.4	10.7	9.6	21.3
Maine	-8.9	9.9	1.0	11.0
Massachusetts	-10.9	15.5	12.0	29.4
New Hampshire	-5.4	22.2	7.3	31.1
New Jersey	-8.6	9.2	16.8	27.5
New York	-6.1	9.1	9.1	19.0
Pennsylvania	-7.2	12.3	4.4	17.3
Rhode Island	-6.1	16.2	8.2	25.8
Vermont	-8.3	18.8	3.3	22.6
Midwest	-4.3	11.5	3.6	15.5
Illinois	-3.5	8.2	7.6	16.4
Indiana	-5.8	7.8	5.7	13.9
Iowa	-1.7	11.0	-2.4	8.3
Kansas	3.4	17.8	1.4	19.5
Michigan	-10.3	10.2	6.2	17.0
Minnesota	3.4	20.5	-0.6	19.8
Missouri	-0.8	11.7	2.9	15.0
Nebraska	1.8	14.4	0.6	15.1
North Dakota	-0.8	10.4	-2.8	7.3
Ohio	-9.8	8.7	4.4	13.6
South Dakota	7.6	14.6	1.2	16.0
Wisconsin	-0.2	18.0	-1.2	16.6
South	-0.6	14.2	8.6	24.1
Alabama	-4.7	5.7	10.4	16.8
Arkansas	-3.0	8.2	5.0	13.6
Delaware	1.6	19.1	10.2	31.2
District of Columbia	-17.0	5.5	12.5	18.6
Florida	6.2	25.4	8.6	36.2
Georgia	2.9	15.6	11.8	29.3
Kentucky	-2.8	3.5	1.7	5.3
Louisiana	-0.8	6.5	1.5	8.1
Maryland	-4.3	21.2	13.9	38.0
Mississippi	-2.9	3.7	1.8	5.6
North Carolina	-7.9	13.9	16.8	33.0
Oklahoma	-5.8	14.1	1.5	15.8
South Carolina	-3.9	9.5	10.2	20.6
Tennessee	-2.0	10.4	10.3	21.7
Texas	5.1	16.9	7.0	25.0
Virginia	-5.4	18.4	13.7	34.6
West Virginia	-8.3	-5.6	1.1	-4.6
West	9.6	23.0	12.7	38.7
Alaska	11.2	26.9	10.7	40.4
Arizona	14.5	21.8	11.4	35.7
California	8.6	24.1	16.3	44.4
Colorado	-0.8	27.8	7.6	37.5
Hawaii	2.0	17.0	12.3	31.5
Idaho	18.7	13.9	5.2	19.8
Montana	4.3	14.9	-0.5	14.4
Nevada	24.1	38.7	9.2	51.4
New Mexico	8.7	19.8	10.7	32.6
Oregon	8.8	18.5	8.2	28.3
Utah	28.4	10.0	5.1	15.7
Washington	9.1	27.8	10.5	41.2
Wyoming	4.6	11.6	1.7	13.5

SOURCE: U.S. Department of Education, National Center for Education Statistics, Common Core of Data surveys and "Public Elementary and Secondary Education Statistics: School Year 1993–94," *Early Estimates*. (This table was prepared August 1994.)

Chapter 9

Public High School Graduates

The projected increases in public high school enrollment between 1993 and 2005 will cause corresponding increases in the number of public high school graduates. The number of public high school graduates is expected to increase by 20 percent between 1992–93 and 2004–2005. This increase will be reflected in many states, with 46 states showing increases (table 51 and figure 68). Each region of the country is expected to reflect this increase in the number of public high school graduates. A significant increase is expected in the West and smaller increases are projected for the South, Midwest, and Northeast.

The Northeast is expected to increase 18 percent between 1992–93 and 2004–2005 (table 52 and figure 69). Increases are expected in all states in the region. These increases reverse the enrollment declines in all of the states during the late 1980s. Increases are expected in Connecticut (22 percent), New Hampshire (29 percent), Pennsylvania (24 percent), and Rhode Island (19 percent). Other increases are projected for Massachusetts (13 percent), New Jersey (16 percent), New York (16 percent), and Vermont (15 percent). Over the projection period, most of the growth in the number of public high school graduates in the states will occur between 1998–99 and 2004–2005.

The number of public high school graduates in the Midwest is expected to increase by 14 percent between 1992–93 and 2004–2005. Increases are expected in Kansas (21 percent), Minnesota (34 percent), South Dakota (25 percent), and Wisconsin (33 percent). Other increases are projected in Illinois (14 percent), Iowa (12 percent), Missouri (17 percent), and Nebraska (13 percent). Smaller increases are projected for Indiana (3 percent), Michigan (8 percent), North Dakota (1 percent), and Ohio (6 percent). Most of the growth in the number of public high school graduates in the states will occur between 1992–93 and 1998–1999.

Between 1986–87 and 1992–93, the number of public high school graduates in the South increased by 4 percent. Between 1992–93 and 2004–2005, it will increase by 16 percent. Significant increases are expected in Delaware (29 percent), Florida (39 percent), Georgia (25 percent), and Maryland (28 percent). Smaller increases are projected for Arkansas (3 percent), Kentucky (5 percent), North Carolina (9 percent), Oklahoma (12 percent), South Carolina (7 percent), and Tennessee (10 percent). Despite an overall increase in the region, five Southern states are expected to have declines in the number of graduates. Decreases are expected in Alabama (4 percent), District of Columbia (10 percent), Louisiana (2 percent), Mississippi (1 percent), and West Virginia (15 percent). Most of the growth in the number of public high school graduates in a majority of the states will occur between 1992–93 and 1998–99.

The number of high school graduates in the West is expected to increase substantially, rising by 35 percent. Sizable increases are expected in Alaska (44 percent), Arizona (46 percent), California (34 percent), Colorado (39 percent), Nevada (97 percent), Oregon (36 percent), and Washington (44 percent). Other increases are projected in Hawaii (18 percent), Idaho (19 percent), Montana (26 percent), New Mexico (21 percent), and Utah (18 percent). Wyoming is expected to increase by only 3 percent. Most of the growth in the number of public high school graduates in a majority of the states will occur between 1992–93 and 1998–99.

Figure 68
Percent change in number of public high school graduates, by state: 1992-93 to 2004-2005

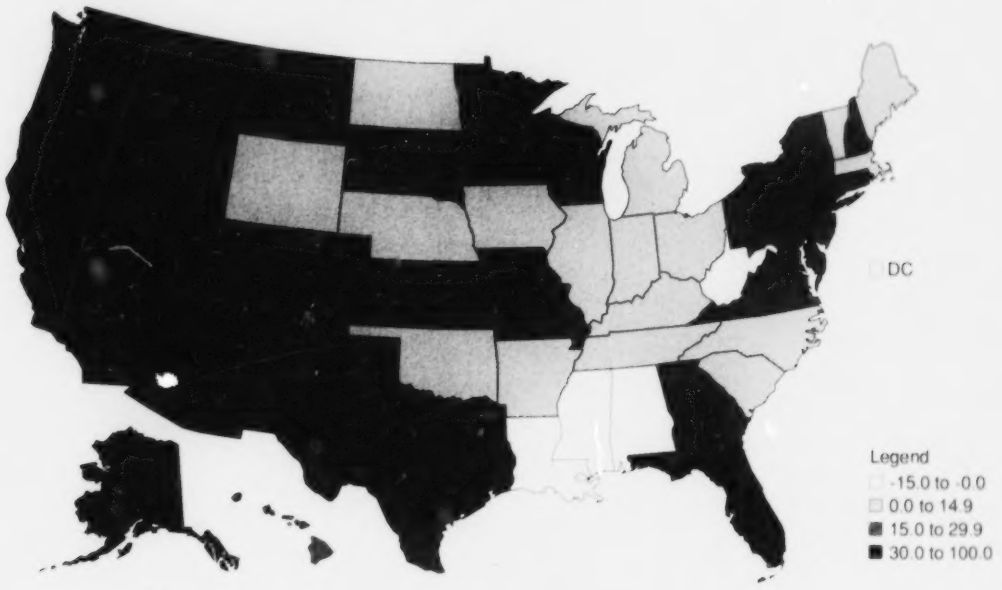

Figure 69
Percent change in number of public high school graduates, by region: 1992-93 to 2004-2005

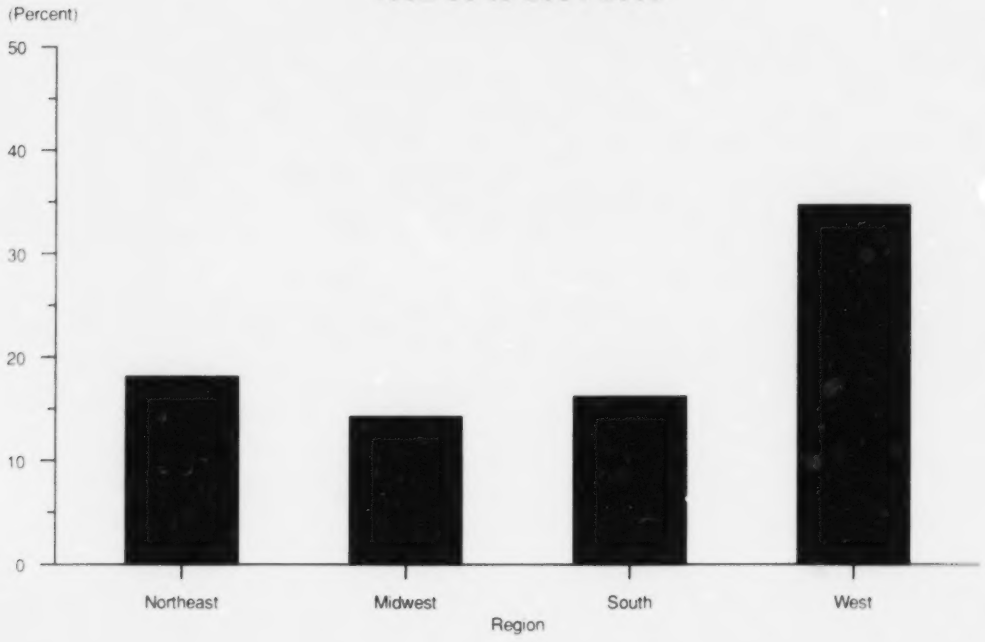

Table 51.—Number of high school graduates in public schools, by region and state, with projections: 1986–87 to 2004–2005

Region and state	Actual						Estimate	Projected		
	1986–87	1987–88	1988–89	1989–90	1990–91	1991–92	1992–93	1993–94	1994–95	1995–96
United States	2,428,803	2,500,191	2,458,800	2,320,337	2,234,893	2,211,891	2,254,681	2,227,230	2,221,150	2,307,360
Northeast	495,738	503,041	477,668	446,045	419,007	419,115	418,159	407,290	405,680	417,580
Connecticut	31,141	32,383	30,862	27,878	27,290	27,079	27,329	26,580	26,620	27,440
Maine	13,692	13,808	13,857	13,839	13,151	13,177	13,169	12,820	12,490	12,610
Massachusetts	61,010	59,515	57,328	55,941	50,216	50,317	50,673	48,280	47,490	48,280
New Hampshire	10,796	11,685	11,340	10,766	10,059	10,329	10,231	10,200	10,050	10,440
New Jersey	79,376	80,863	76,263	69,824	67,003	66,669	66,242	64,330	64,250	65,940
New York	163,765	165,379	154,580	143,318	133,562	134,573	133,995	131,380	131,210	135,580
Pennsylvania	121,219	124,376	118,921	110,527	104,770	103,881	103,183	100,720	100,570	103,900
Rhode Island	8,771	8,855	8,554	7,825	7,744	7,859	7,914	7,660	7,660	7,900
Vermont	5,968	6,177	5,963	6,127	5,212	5,231	5,422	5,310	5,360	5,490
Midwest	657,067	675,571	663,225	616,700	583,888	578,106	576,350	574,970	567,570	592,600
Illinois	116,075	119,090	116,660	108,119	103,329	102,742	102,611	101,270	102,640	106,460
Indiana	60,364	64,037	63,571	60,012	57,892	56,630	55,959	55,790	54,470	56,800
Iowa	34,580	35,218	34,294	31,796	28,593	29,224	29,659	30,100	29,750	31,310
Kansas	26,933	27,036	26,848	25,367	24,414	24,129	24,452	24,510	24,730	26,080
Michigan	102,725	106,151	101,784	93,807	88,234	87,756	86,321	84,200	82,400	84,020
Minnesota	53,533	54,645	53,122	49,087	46,474	46,228	47,546	47,660	48,180	50,500
Missouri	50,840	51,316	51,968	48,957	46,928	46,556	46,604	46,230	45,770	48,560
Nebraska	18,129	18,300	18,690	17,664	16,500	17,057	17,205	17,540	17,030	17,840
North Dakota	7,821	8,432	8,077	7,690	7,573	7,438	7,543	7,510	7,540	7,960
Ohio	121,121	124,503	125,036	114,513	107,484	104,522	102,260	103,420	99,170	102,980
South Dakota	8,074	8,415	8,181	7,650	7,127	7,261	7,229	7,540	7,940	8,070
Wisconsin	56,872	58,428	54,994	52,038	49,340	48,563	48,963	49,180	47,930	52,040
South	807,348	833,532	836,992	796,385	780,268	748,626	772,311	753,820	751,360	781,530
Alabama	42,463	43,799	43,437	40,485	39,042	38,680	39,316	37,690	36,760	38,340
Arkansas	27,101	27,776	27,920	26,475	25,668	25,845	26,073	25,440	25,220	26,070
Delaware	5,895	5,963	6,104	5,550	5,223	5,325	5,318	5,320	5,350	5,440
District of Columbia	3,842	3,882	3,565	3,626	3,369	3,385	3,178	3,100	3,130	3,090
Florida	82,184	89,206	90,759	88,934	87,419	93,674	97,296	95,140	95,300	97,600
Georgia	60,018	61,765	61,937	56,605	60,088	57,742	60,895	59,860	58,950	62,080
Kentucky	36,948	39,484	38,883	38,005	35,835	33,896	33,825	34,600	34,380	36,520
Louisiana	39,084	39,058	37,198	36,053	33,489	32,247	33,565	32,940	33,200	33,850
Maryland	46,107	47,175	45,791	41,566	39,014	39,720	39,226	38,040	38,020	40,500
Mississippi	26,201	27,896	24,241	25,182	23,665	22,912	22,935	22,820	22,630	23,140
North Carolina	65,421	67,836	69,970	64,782	62,792	61,157	61,140	58,820	57,090	59,270
Oklahoma	35,514	36,145	36,773	35,606	33,007	32,670	33,180	30,130	31,370	33,110
South Carolina	36,000	36,113	37,020	32,483	32,999	30,698	31,692	30,780	30,360	31,770
Tennessee	44,731	47,904	48,553	46,094	44,847	45,138	45,359	44,640	43,710	46,100
Texas	168,430	171,436	176,951	172,480	174,306	148,145	159,783	157,670	159,180	164,620
Virginia	65,008	65,688	65,004	60,605	58,441	57,338	58,851	56,530	56,870	59,490
West Virginia	22,401	22,406	22,886	21,854	21,064	20,054	20,679	20,310	19,830	20,630
West	468,650	488,047	480,915	461,207	451,730	466,044	487,862	491,150	496,540	515,640
Alaska	5,692	5,907	5,631	5,386	5,458	5,535	5,712	5,630	5,830	6,030
Arizona	29,549	29,777	31,919	32,103	31,282	31,264	32,721	32,930	33,970	36,420
California	237,414	249,617	244,629	236,291	234,164	244,594	259,051	261,370	259,350	265,240
Colorado	34,200	35,977	35,520	32,967	31,293	31,059	31,057	31,480	31,770	32,670
Hawaii	10,371	10,575	10,404	10,325	8,974	9,160	9,462	8,960	9,470	9,450
Idaho	12,243	12,425	12,520	11,971	11,961	12,734	13,474	13,550	14,170	15,030
Montana	10,073	10,311	10,490	9,370	9,013	9,046	9,107	9,240	9,580	9,960
Nevada	9,506	9,404	9,464	9,477	9,370	8,811	9,430	9,940	10,470	11,320
New Mexico	15,701	15,868	15,481	14,884	15,157	14,824	15,395	15,060	15,000	15,860
Oregon	27,165	28,058	26,903	25,473	24,597	25,305	25,785	26,460	27,190	28,540
Utah	20,930	22,226	22,934	21,196	22,219	23,513	25,171	25,520	27,930	29,420
Washington	49,873	51,754	48,941	45,941	42,514	44,381	45,439	44,940	45,810	49,490
Wyoming	5,933	6,148	6,079	5,823	5,728	5,818	6,058	6,060	6,000	6,220

Table 51.—Number of high school graduates in public schools, by region and state, with projections: 1986–87 to 2004–2005—Continued

Region and state	Projected								
	1996–97	1997–98	1998–99	1999–2000	2000–2001	2001–2002	2002–2003	2003–2004	2004–2005
United States	2,348,400	2,426,480	2,515,680	2,579,220	2,628,720	2,652,660	2,677,260	2,735,490	2,706,520
Northeast	427,180	435,490	443,710	457,410	469,310	474,900	481,850	493,290	493,810
Connecticut	28,120	28,470	29,470	30,440	31,100	31,840	32,840	33,600	33,360
Maine	12,850	13,190	13,090	13,600	13,860	14,180	14,330	14,470	14,010
Massachusetts	48,820	49,840	51,000	52,620	54,250	54,950	56,730	58,350	57,500
New Hampshire	10,430	11,060	11,550	12,390	12,830	13,270	13,310	13,910	13,200
New Jersey	66,440	68,080	68,750	70,160	71,650	71,590	73,430	75,330	76,620
New York	139,320	141,280	142,240	146,600	150,050	151,640	152,970	155,880	155,290
Pennsylvania	107,790	109,800	113,350	116,710	120,340	121,840	122,120	125,840	128,230
Rhode Island	7,970	8,100	8,450	8,860	9,060	9,120	9,560	9,480	9,390
Vermont	5,430	5,660	5,800	6,010	6,170	6,470	6,570	6,420	6,220
Midwest	598,650	621,930	646,130	650,450	652,410	652,300	655,050	670,400	658,210
Illinois	105,750	111,270	115,290	112,450	111,100	110,110	115,290	118,250	117,260
Indiana	57,740	58,720	61,030	61,040	61,530	60,270	59,570	58,980	57,500
Iowa	31,710	33,000	34,630	34,930	34,480	34,870	33,930	34,500	33,220
Kansas	26,560	27,470	28,900	29,900	30,030	30,390	29,920	30,350	29,690
Michigan	84,380	87,100	89,010	89,750	91,130	90,950	92,060	95,070	92,890
Minnesota	52,460	55,240	58,350	60,310	62,030	62,210	62,880	64,570	63,710
Missouri	49,390	50,870	52,060	51,850	52,180	54,290	53,630	55,110	54,730
Nebraska	18,420	18,940	19,950	20,440	20,140	19,970	20,100	19,970	19,390
North Dakota	7,910	8,050	8,240	8,520	8,540	8,440	8,090	8,020	7,610
Ohio	102,650	106,240	109,740	110,450	110,010	108,270	106,880	110,610	108,050
South Dakota	8,300	8,870	9,180	9,380	9,480	9,280	9,280	9,320	9,070
Wisconsin	53,400	56,140	59,750	61,430	61,760	63,260	63,410	65,640	65,090
South	795,360	817,470	846,480	867,620	882,780	889,830	895,650	913,830	897,160
Alabama	38,940	39,410	40,460	39,980	39,830	39,400	38,900	38,330	37,630
Arkansas	25,870	27,110	28,130	27,880	27,810	27,880	27,460	27,740	26,900
Delaware	5,770	6,120	6,370	6,620	6,700	6,730	6,860	6,890	6,860
District of Columbia	3,140	3,020	2,950	3,030	2,960	2,900	2,870	2,850	2,860
Florida	99,410	104,420	109,500	117,140	123,420	128,440	132,220	137,750	135,050
Georgia	64,100	66,780	70,200	72,330	73,620	74,660	74,090	75,770	75,890
Kentucky	36,550	37,230	38,410	38,070	37,760	37,760	37,660	38,050	35,530
Louisiana	34,480	34,920	35,100	34,490	34,450	34,110	33,470	34,170	33,000
Maryland	41,030	42,860	44,520	46,440	48,280	49,130	49,980	50,680	50,290
Mississippi	24,270	24,030	24,820	25,210	24,790	24,070	23,710	23,370	22,820
North Carolina	59,990	60,930	61,500	63,280	63,550	63,710	65,620	66,620	66,470
Oklahoma	33,860	34,330	35,580	36,770	37,940	38,140	37,710	37,250	37,020
South Carolina	32,150	33,080	34,170	34,400	34,770	34,220	34,350	34,870	34,010
Tennessee	46,700	47,290	47,880	49,050	49,640	49,140	49,360	50,530	49,690
Texas	171,980	176,110	184,530	189,280	192,210	194,450	195,860	200,400	196,360
Virginia	56,490	60,260	62,450	63,850	65,500	66,080	67,600	70,800	69,170
West Virginia	20,620	19,530	19,910	19,790	19,550	19,010	17,950	17,730	17,620
West	527,210	551,590	579,360	603,740	624,230	635,620	644,710	657,970	657,350
Alaska	6,620	6,770	7,150	7,420	7,770	7,630	7,970	8,320	8,230
Arizona	37,890	39,330	41,690	43,750	45,040	46,190	46,640	48,130	47,640
California	270,340	280,690	296,320	310,960	321,120	328,630	335,630	345,440	345,920
Colorado	33,530	35,630	37,660	39,270	40,930	41,740	41,890	42,640	43,200
Hawaii	9,600	9,930	10,310	10,590	10,790	10,880	10,920	10,770	11,130
Idaho	15,500	16,300	16,580	16,860	17,430	17,380	17,260	16,750	15,980
Montana	10,310	10,470	10,970	11,430	11,570	11,640	11,770	11,690	11,520
Nevada	11,770	12,650	13,890	14,830	15,730	16,390	17,160	17,900	18,590
New Mexico	16,500	16,700	17,530	18,090	18,490	18,900	18,710	18,920	18,670
Oregon	29,310	30,780	30,880	32,270	33,760	34,660	35,080	35,450	35,010
Utah	28,230	31,270	32,140	31,720	32,270	31,010	30,450	29,850	29,570
Washington	51,300	54,300	57,340	59,690	62,430	63,810	64,490	65,460	65,660
Wyoming	6,290	6,770	6,890	6,870	6,910	6,760	6,750	6,640	6,210

SOURCE: U.S. Department of Education, National Center for Education Statistics, Common Core of Data Surveys and "Public Elementary and Secondary Education Statistics: School Year 1993–94," *Early Estimates*. (This table was prepared August 1994.)

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Table 52.—Percent change in number of public high school graduates, by region and state, with projections: 1986–87 to 2004–2005

Region and state	Actual	Projected		
	1986–87 to 1992–93	1992–93 to 1998–99	1998–99 to 2004–2005	1992–93 to 2004–2005
United States	-7.2	11.6	7.6	20.0
Northeast	-15.6	6.1	11.3	18.1
Connecticut	-12.2	7.8	13.2	22.1
Maine	-3.8	-0.6	7.0	6.4
Massachusetts	-16.9	0.7	12.7	13.5
New Hampshire	-5.2	12.9	14.3	29.0
New Jersey	-16.5	3.8	11.4	15.7
New York	-18.2	6.2	9.2	15.9
Pennsylvania	-14.9	9.8	13.1	24.3
Rhode Island	-9.8	6.7	11.2	18.7
Vermont	-9.1	7.0	7.1	14.6
Midwest	-12.3	12.1	1.9	14.2
Illinois	-11.6	12.4	1.7	14.3
Indiana	-7.3	9.1	-5.8	2.8
Iowa	-14.2	16.8	-4.1	12.0
Kansas	-9.2	18.2	2.7	21.4
Michigan	-16.0	3.1	4.4	7.6
Minnesota	-11.2	22.7	9.2	34.0
Missouri	-8.3	11.7	5.1	17.4
Nebraska	-5.1	15.9	-2.8	12.7
North Dakota	3.6	9.2	-7.7	0.8
Ohio	-15.6	7.3	-1.5	5.7
South Dakota	10.5	27.0	-1.2	25.5
Wisconsin	-13.9	22.0	8.9	32.9
South	-4.3	9.6	6.0	16.2
Alabama	-7.4	2.9	-7.0	-4.3
Arkansas	-3.8	7.9	-4.4	3.2
Delaware	-9.8	19.8	7.6	29.0
District of Columbia	-17.3	-7.3	-2.8	-9.9
Florida	18.4	12.5	23.3	38.8
Georgia	1.5	15.3	8.1	24.6
Kentucky	-8.5	13.6	-7.5	5.0
Louisiana	-14.1	4.6	-6.0	-1.7
Maryland	-14.9	13.5	13.0	28.2
Mississippi	-12.5	8.2	-8.1	-0.5
North Carolina	-6.5	0.6	8.1	8.7
Oklahoma	-6.6	7.2	4.0	11.6
South Carolina	-12.0	7.8	-0.5	7.3
Tennessee	1.4	5.6	3.8	9.5
Texas	-5.1	15.5	6.4	22.9
Virginia	-9.5	6.1	10.8	17.5
West Virginia	-7.7	-3.7	-11.5	-14.8
West	4.1	18.8	13.5	34.7
Alaska	0.4	25.1	15.2	44.1
Arizona	10.7	27.4	14.3	45.6
California	9.1	14.4	16.7	33.5
Colorado	-9.2	21.3	14.7	39.1
Hawaii	-8.8	9.0	7.9	17.6
Idaho	10.1	23.1	-3.6	18.6
Montana	-9.6	20.4	5.0	26.5
Nevada	-0.8	47.3	33.8	97.2
New Mexico	1.9	13.9	6.5	21.3
Oregon	-5.1	19.7	13.4	35.8
Utah	20.3	27.7	-8.0	17.5
Washington	-8.9	26.2	14.5	44.5
Wyoming	2.1	13.8	-9.8	2.6

SOURCE: U.S. Department of Education, National Center for Education Statistics, Common Core of Data surveys and "Public Elementary and Secondary Education Statistics: School Year 1993–94," *Early Estimates*. (This table was prepared August 1994.)

Technical Appendixes

Appendix A

Projection Methodology

The general procedure for *Projections* was to express the variable to be projected as a percent of a "base" variable. These percents were then projected and applied to projections of the "base" variable. For example, the number of 18-year-old college students was expressed as a percent of the 18-year-old population for each year from 1972 through 1992. This percent was then projected through the year 2005 and applied to projections of the 18-year-old population from the Bureau of the Census.

Enrollment projections are based primarily on population projections. Projections of classroom teachers, high school graduates, earned degrees conferred, and expenditures are based primarily on enrollment projections.

Single exponential smoothing, double exponential smoothing, and multiple linear regression are the three major projection techniques used in this publication. Single exponential smoothing is used when the historical data have a basically horizontal pattern. On the other hand, double exponential smoothing is used when the time series is expected to change linearly with time. In general, exponential smoothing places more weight on recent observations than on earlier ones. The weights for observations decrease exponentially as one moves further into the past. As a result, the older data have less influence on projections. The rate at which the weights of older observations decrease is determined by the smoothing constant selected.

$$P = \alpha X_t + \alpha(1-\alpha)X_{t-1} + \alpha(1-\alpha)^2X_{t-2} + \alpha(1-\alpha)^3X_{t-3} + \ldots$$

Where:

P = projected constant

α = smoothing constant ($0 < \alpha < 1$)

X_t = observation for time t

This equation illustrates that the projection is a weighted average based on exponentially decreasing weights. For a high smoothing constant, weights for earlier observations decrease rapidly. For a low smoothing constant, decreases are more moderate. Projections of enrollments and public high school graduates are based on a range of smoothing constants (α = 0.2 to 0.9).

In general, the projections in this publication are based on fairly high smoothing constants. The farther apart the observations are spaced in time, it is more likely that there are changes in the underlying social, political, and economic structure. Since the observations are on an annual basis, major shifts in the underlying process are more likely in the time span of just a few observations than if the observations were available on a monthly or weekly basis. As a result, the underlying process tends to be unstable from one observation to the next. Another reason for using high smoothing constants for some time series is that most of the observations are fairly accurate, because most observations are population values rather than sample estimates. Therefore, large shifts tend to indicate actual changes in the process rather than noise in the data.

Multiple linear regression was also used in making projections, primarily in the areas of teachers, earned degrees, and expenditures. This technique was used when it was believed that a strong causal relationship existed between the variable being projected (the dependent variable) and independent causal variables. However, this technique was used only when accurate data and reliable projections of the independent variables were available.

The functional form primarily used was the multiplicative model. When used with two independent variables, this model takes the form:

$$Y = aX_1^{b_1}X_2^{b_2}$$

This equation can easily be transformed into the linear form by taking the natural log(ln) of both sides of the equation:

$$\ln Y = \ln(a) + b_1 \ln X_1 + b_2 \ln X_2$$

The multiplicative model has a number of advantages; it is a reasonable way to represent human behavior. Constant elasticities are assumed; this says that a 1 percent change in ln X will lead to a given percent change in ln Y. This percent change is equal to b_1. And it lends itself easily to "a priori" analysis because the researcher does not have to worry about units of measurement when specifying relationships. In fact, the multiplicative model is considered the standard in economic problems. For additional information, see *Long-Range Forecasting: From Crystal Ball to Computer* by J. Scott Armstrong (John Wiley and Sons, 1978, pp. 180–181).

Caveats

Because projections are subject to errors from many sources, alternative projections are shown for some statis-

tical series. These alternatives are not statistical confidence intervals, but instead represent judgments made by the authors as to reasonable upper and lower bounds for each projected series. Alternative projections were developed for higher education enrollment, classroom teachers, earned degrees conferred, and expenditures in public elementary and secondary schools and institutions of higher education.

Assumptions

All projections are based on underlying assumptions, and these assumptions determine projection results to a large extent. It is important that users of projections understand the assumptions to determine the acceptability of projected time series for their purposes. In each chapter, there are descriptions of the primary assumptions upon which the projections of time series are based.

For most projections, low, middle, and high alternatives are shown. These alternatives reveal the level of uncertainty involved in making projections, and they also point out the sensitivity of projections to the assumptions on which they are based.

Many of the projections in this publication are demographically based. Bureau of the Census middle series projections of the population by age were used. These middle series population projections are based on the 1990 census. The future fertility rate assumption, which determines projections of the number of births, is the key assumption in making population projections. The middle series population projections assume an ultimate complete cohort fertility rate of 2.15 births per woman by the year 2050 and a net immigration of 880,000 per year. This assumption plays a major role in determining population projections for the age groups enrolled in nursery school, kindergarten, and elementary grades. The effects of the fertility rate assumption are more pronounced toward the end of the projection period.

For enrollments in secondary grades and college, the fertility assumption is of no consequence, since all students enrolled at these levels were already born when the population projections were made. For projections of enrollments in elementary schools, only middle series population projections were considered. Projections of high school graduates are based on projections of the number of high school graduates expressed as a percent of grade 12 enrollment. Projections of associate, bachelor's, master's, doctor's, and first-professional degrees are based on projections of college-age populations and higher education enrollment, by sex, attendance status and level enrolled by student, and by type of institution. Many of the projections of classroom teachers and expenditures of public elementary and secondary schools and institutions of higher education are based on projections of disposable income per capita and various revenue measures of state and local governments. Disposable income per capita projections were obtained from DRI/McGraw-Hill. Therefore, the many assumptions made in projecting disposable income per capita also apply to those projections based on projections of disposable income per capita.

A1. Enrollment

National

Enrollment projections were based on projected enrollment rates, by age and sex, which were applied to population projections by age and sex developed by the Bureau of the Census. These enrollment rates were projected by taking into account the most recent trends, as well as the effects of economic conditions and demographic changes on a person's decision to enter college. The enrollment rates were then used in an interactive forecasting model (IFMOD), which consists of age-specific rates by sex and by enrollment levels (nursery school through college). The model has 5 stages. See figure 70.

The first stage of IFMOD is an age-specific enrollment model in which enrollment rates are projected and applied to age-specific population projections. This stage, which is used separately for each sex, includes the following categories: (1) nursery and kindergarten, (2) elementary grades 1–8, (3) secondary grades 9–12, (4) full-time college enrollment, and (5) part-time college enrollment. For each of these enrollment categories, enrollment rates were projected by individual ages 3 through 24 and for the age groups 25 to 29, 30 to 34, and 35 years and over.

Enrollments by age and age groups from the Bureau of the Census were adjusted to NCES totals to compute enrollment rates for 1972 through 1992. Different assumptions were made to produce low, middle, and high alternative projections of enrollment rates to the year 2005.

Elementary Grades 1–8

Projections of elementary enrollment rates were considered for ages 5 through 21. Elementary enrollments are negligible for the remaining ages. Because most elementary enrollment rates have been fluctuating at levels close to 100 percent from 1972 to 1992, alternative enrollment rate projections were not computed. The only set of enrollment rate projections computed was based on the assumption that rates will remain constant through the year 2005 (table A1.1). Several of the rates in table A1.1 exceed 100 percent, as a result of several factors. The enrollment data by age were prorated to agree with NCES totals. The Bureau of the Census does not revise enrollment estimates by age, but population estimates are revised regularly.

Secondary Grades 9–12

Projections of secondary enrollment rates were considered for ages 12 through 34. Secondary enrollments are negligible for the remaining ages. Secondary enrollment rates have fluctuated within a narrow range from 1972 to 1992. Therefore, alternative enrollment rate projections were not calculated. The only set of projections computed was based on constant enrollment rates (table A1.2).

College Full-Time and Part-Time Enrollment

Projections of full-time and part-time college enrollments were considered only for ages 16 and over. (College enrollment is negligible for earlier ages.) Three alternative projections were made using various assumptions. Table A1.3 shows enrollment rates for 1992 and low, middle, and high alternative projected enrollment rates for 2000 and 2005.

Table A1.4 shows the equations used to project enrollment rates for 18-year-old men by attendance status, 19-year-old men by attendance status, 20-year-old men enrolled part-time, and 21-year-old men enrolled part-time. Table A1.5 shows the equation used to project enrollment rates for 18-year-old women by attendance status, 19-year-old women enrolled full-time, and 21-year-old women enrolled full-time.

Enrollment in Public Elementary and Secondary Schools, by Grade Group and Organizational Level

The third stage of IFMOD projects public enrollment in elementary and secondary schools by grade group and by organizational level. Public enrollments by age were based on enrollment rate projections for nursery and kindergarten, grade 1, elementary ungraded and special, secondary ungraded and special, and postgraduate enrollment. Grade retention rate projections were used for grades 2 through 12. Table A1.6 shows the public school enrollment rates and table A1.7 shows the public grade-retention rates for 1992 and projections for 2000 and 2005. The projected rates in tables A1.6 and A1.7 were used to compute the projections of enrollments in elementary and secondary schools, by grade, shown in table 1.

College Enrollment, by Sex, Attendance Status, and Level Enrolled; and by Type and Control of Institution

The fourth stage of IFMOD projects enrollments in institutions of higher education, by sex, attendance status, and level enrolled by student and by type and control of institution. For each age group, the percent that enrollment by age, attendance status, level enrolled, and by

type of institution was of total enrollment was projected. These projections are shown in tables A1.8 and A1.9, along with actual values for 1992. For all projections, it was assumed that there was no enrollment in 2-year institutions at the postbaccalaureate level (graduate and first-professional).

The projected rates in tables A1.8 and A1.9 were then adjusted to agree with the projected age-specific enrollment rates in the first stage of IFMOD. The adjusted rates were then applied to the projected enrollments by age group, sex, and attendance status from the first stage of IFMOD to obtain projections by age group, sex, attendance status, level enrolled, and type of institution.

For each enrollment category—sex, attendance status, level enrolled, and type of institution—the percent that public enrollment was of total enrollment was projected. These projections are shown in table A1.10, along with actual percent for 1992 and projections for 2000 and 2005. The projected rates shown were then applied to the projected enrollments in each enrollment category to obtain projections by control of institution.

For each enrollment category by sex and enrollment level, and by type and control of institution, the percent that graduate enrollment was of postbaccalaureate enrollment was projected. Actual rates for 1992 and projections for 2000 and 2005 are shown in table A1.11. The projected rates in table A1.11 were then applied to projections of postbaccalaureate enrollment to obtain graduate and first-professional enrollment projections by sex and attendance status, and by type and control of institution.

Full-Time-Equivalent Enrollment, by Type and Control of Institution and by Level Enrolled

The fifth stage of IFMOD projects full-time-equivalent enrollment, by type and control of institution and by level enrolled. For each enrollment category by level enrolled and by type and control of institution, the percent that the full-time-equivalent of part-time enrollment was of part-time enrollment was projected. Actual percents for 1992 and projections for 2000 and 2005 are shown in table A1.12.

These projected percents were applied to projections of enrollment by level enrolled and by type and control of institution from the fourth stage of IFMOD. The projections of the full-time-equivalent of part-time enrollment were added to projections of full-time enrollment (from the previous stage) to obtain projections of full-time-equivalent enrollment.

Projection Accuracy

An analysis of projection errors from the past 11 editions of *Projections of Education Statistics* indicates that the mean absolute percentage errors (MAPEs) for lead times of 1, 2, 5, and 10 years out for projections of public school enrollment in grades K–12 were 0.4, 0.7, 1.2, and 2.4 percent, respectively. For the 1-year-out prediction, this means that one would expect the projection to be within 0.4 percent of the actual value, on the average. For projections of public school enrollment in grades K–8, the MAPEs for lead times of 1, 2, 5, and 10 years were 0.6, 0.9, 1.3, and 3.6 percent, respectively, while those for projections of public school enrollment in grades 9–12 were 0.6, 0.6, 1.1, and 3.8 percent for the same lead times.

For projections of enrollment in higher education, an analysis of projection errors based on the past eight editions of *Projections of Education Statistics* indicates that the MAPEs for lead times of 1, 2, and 5 years were 1.8, 3.5, and 6.7 percent, respectively. For the 1-year-out prediction, this means that one would expect the projection to be within 1.8 percent of the actual value, on the average.

Basic Methodology

The notation and equations that follow describe the basic models used to project public elementary and secondary enrollment.

Public Elementary and Secondary Enrollment

Let:

i = Subscript denoting age

j = Subcript denoting grade

t = Subscript denoting time

K_t = Enrollment at the nursery and kindergarten level

G_{jt} = Enrollment in grade j

G_{1t} = Enrollment in grade 1

E_t = Enrollment in elementary special and ungraded programs

S_t = Enrollment in secondary special and ungraded programs

PG_t = Enrollment in postgraduate programs in secondary schools

P_{it} = Population age i

RK_t = Enrollment rate for nursery and kindergarten

RG_{1t} = Enrollment rate for grade 1

RE_t = Enrollment rate for elementary special and ungraded programs

RS_t = Enrollment rate for secondary special and ungraded programs

RPG_t = Enrollment rate for postgraduate programs

EG_t = Total enrollment in elementary grades (K–8)

SG_t = Total enrollment in secondary grades (9–12)

R_{jt} = Retention rate for grade j: the proportion that enrollment in grade j in year t is of enrollment in grade j–1 in year t–1.

Then:

$$EG_t = K_t + E_t + \sum_{j=1}^{8} G_{jt}$$

$$SG_t = S_t + PG_t + \sum_{j=9}^{12} G_{jt}$$

Where:

$K_t = RK_t(P_{5t})$

$G_{jt} = R_{jt}(G_{j-1,t-1})$

$$E_t = RE_t\left(\sum_{i=5}^{13} P_{it}\right)$$

$G_{1t} = RG_{1t}(P_{6t})$

$$S_t = RS_t\left(\sum_{i=14}^{17} P_{it}\right)$$

$PG_t = RPG_t(P_{18t})$

Higher Education Enrollment

For institutions of higher education, projections were computed separately by sex and attendance status of student. The notation and equations are:

Let:

i = Subscript denoting age except:

i = 25: ages 25–29

i = 26: ages 30–34

i = 27: ages 35 and over for enrollment (35–44 for population)

t = Subscript denoting year

E_{it} = Enrollment of students age i

P_{it} = Population age i

R_{it} = Enrollment rate for students age i

T_{it} = Total enrollment for particular subset of students: full-time men, full-time women, part-time men, part-time women

Then:

$$T_{it} = \sum_{i=16}^{27} E_{it}$$

Where:

$E_{it} = R_{it}(P_{it})$

Methodological Tables

The tables in this section give the rates used to calculate projections of enrollments, basic assumptions underlying enrollment projections (table A1.13), and methods used to estimate values for which data are not available (table A1.14).

Private School Enrollment

Projections of private school enrollment were derived in the following manner. For 1993, the ratio of private school enrollment to public school enrollment was calculated by grade level. These 1993 ratios were then held constant over the projection period. These ratios were then applied to projections of public school enrollment by grade level to yield projections of private school enrollment. This method assumes that the future pattern in the trend of private school enrollment will be the same as that in public school enrollment. The reader is cautioned that a number of factors could alter the assumptions of constant ratios over the projection period.

State-Level

This edition contains projected trends in elementary and secondary enrollment by grade level in public schools

from 1994 to the year 2005. This is the fourth report on state-level projections for public school elementary and secondary education statistics.

Public school enrollment data from the National Center for Education Statistics' Common Core of Data survey for 1970 to 1992 were used to develop these projections. This survey does not collect data on enrollment for private schools. In addition, population estimates for 1970 to 1992 and population projections for 1993 to 2005 from the U.S. Department of Commerce, Bureau of the Census were used to develop the projections.

Table A1.15 describes the number of years, projection methods, and smoothing constants used to project enrollments in public schools. Also included in table A1.15 is the procedure for choosing the different smoothing constants for the time series models.

The grade retention method and the enrollment rate method were used together to project public elementary and secondary school enrollment by state. The grade retention method starts with 6-year-olds entering first grade and then follows their progress through public elementary and secondary schools. The method requires calculating the ratio of the number of children in one year who "survive" the year and enroll in the next grade the following year. The enrollment rate method expresses the enrollment of a particular age group as a percent of the population for the same age group. The projections produced from these two methods were combined to yield a composite projection of enrollment.

First, projections of enrollment in public elementary and secondary schools by state were developed using primarily the grade retention method. Kindergarten and first grade enrollments are based on projected enrollment rates of 5- and 6-year-olds. These projected enrollment rates are applied to population projections of 5- and 6-year-olds developed by the Bureau of the Census.

Enrollments in grades 2 through 12 are based on projected grade retention rates. These projected rates are then applied to the current enrollment by grade to yield grade-by-grade projections for future years. Enrollment rates of 5- and 6-year-olds and retention rates are projected using single exponential smoothing. Elementary ungraded and special enrollments and secondary ungraded and special enrollments are projected to remain constant at their 1992 levels. To obtain projections of total enrollment, projections of enrollments for the individual grades (kindergarten through 12) and ungraded and special classes were summed.

Second, projections of enrollments in public elementary and secondary schools by state were developed using the enrollment rate method. Enrollment in grades K–8 was expressed as a percent of the 5- to 13-year-old population for 1970 to 1992. Similarly, enrollment in grades 9–12 was expressed as a percent of the 14- to 17-year-old population. These percents were then projected using single exponential smoothing and applied to projections of the 5- to 13-year-old and 14- to 17-year-old populations developed by the Bureau of the Census.

The enrollment rate and grade retention methods assume that past trends in factors affecting public school enrollments will continue over the projection period. This assumption implies that all factors influencing enrollments will display future patterns consistent with past patterns. Therefore, this method has limitations when applied to states with unusual changes in migration rates. This method implicitly includes the net effect of such factors as migration, dropouts, deaths, nonpromotion, and transfers to and from private schools.

Combining Enrollment Projections

Projections of public school enrollment are based on the grade retention and enrollment rate methods. Empirical research on national models suggests that the enrollment rate method is superior to the grade retention method as the lead time of the projection increases. For longer lead times, the mean absolute percentage errors of the projections of national public school enrollment based on the enrollment rate method are smaller than those based on the grade retention method. It is reasoned that because the projections based on the enrollment rate method depend on population projections, they reflect long-term shifts in state migration patterns as projected by the Bureau of the Census. On the other hand, the projections based on the grade retention method reflect the net effects of state in- and out-migration for the short term.

For a particular year, the projections of enrollments developed using the grade retention and enrollment rate methods were combined using a simple linear combination of the projections as follows:

$$E = bX_1 + (1-b)X_2$$

Where:

E = combined enrollment projection

X_1 = projection based on the grade retention rate

X_2 = projection based on the enrollment rate method

b = weight

Here, b is an adaptive parameter that changes in time to give the most weight to longer lead times for the most successful of the two projection methods, the enrollment rate. Table A1.16 presents the weights used to combine the two methods.

The sum of the weights b and 1-b is constrained to sum to 1. Empirical evidence suggests that the enrollment rate method is superior to the grade retention method for long lead times and that the grade retention method is more accurate for short lead times.

Adjustment to National Projections

The sum of the projections of state enrollments was adjusted to add to the national projections of public school K–12, K–8, and 9–12 enrollments shown in table 1. For details on the methods used to develop the national projections for this statistic, see the section on national enrollment projections in this appendix.

Figure 70

General structure and methodology of the Interactive Forecasting Model (IFMOD)

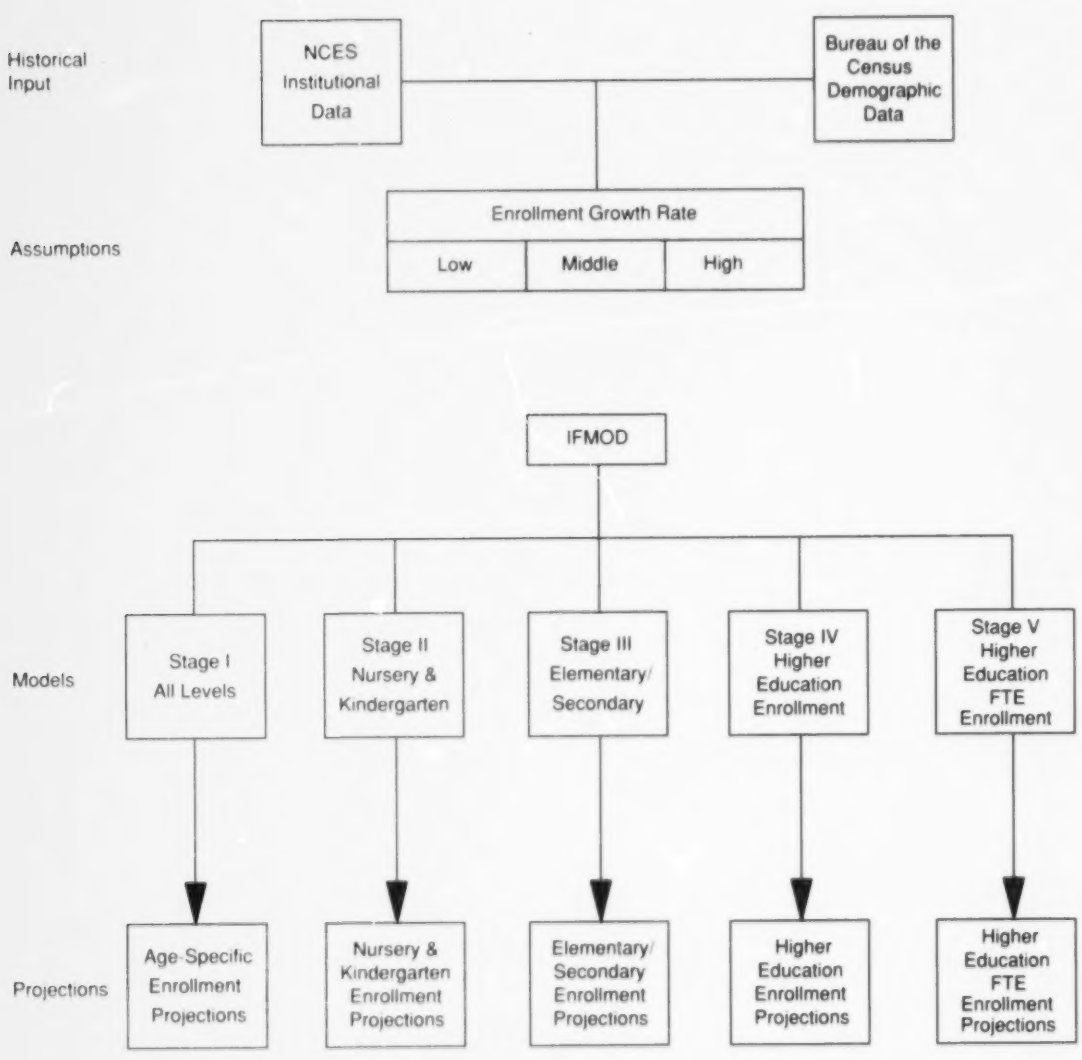

Table A1.1.—Elementary enrollment rates, by age and sex

Age	Boys		Girls	
	1992	1994–2005	1992	1994–2005
5	5.8	5.3	5.4	5.8
6	85.9	84.7	87.9	88.4
7	104.0	103.9	104.6	104.4
8	106.9	105.8	110.6	107.3
9	99.8	100.3	99.1	99.7
10	102.6	101.6	96.7	100.2
11	102.2	103.5	106.6	104.4
12	103.4	103.5	103.8	103.0
13	97.2	96.9	95.1	95.7
14	41.0	38.5	23.1	24.8
15	6.5	6.7	5.1	4.2
16	0.8	0.6	0.1	0.2
17	0.0	0.0	0.0	0.0
18	0.0	0.0	0.4	0.2

Table A1.2.—Secondary enrollment rates, by age and sex

Age	Boys		Girls	
	1992	1994–2005	1992	1994–2005
12	0.5	0.3	0.3	0.3
13	4.4	4.8	5.7	6.4
14	58.7	61.4	74.9	73.3
15	89.0	89.1	91.5	91.3
16	93.1	92.1	92.2	92.6
17	81.9	80.9	80.1	79.2
18	32.8	28.7	20.0	18.5
19	6.1	6.4	4.8	4.3
20	1.4	1.4	1.5	1.4
21	0.7	0.7	0.8	0.7
22	0.3	0.4	0.4	0.4
23	0.7	0.4	0.6	0.6
24	0.4	0.4	0.7	0.5
25–29	0.1	0.2	0.5	0.4
30–34	0.2	0.2	0.3	0.3

Table A1.3.—College enrollment rates, by age, sex, and attendance status, with alternative projections

Age, sex, and attendance status	1992	Low alternative		Middle alternative		High alternative	
		2000	2005	2000	2005	2000	2005
Men							
Full-time:							
16	0.0	0.1	0.1	0.1	0.1	0.1	0.1
17	4.8	5.4	6.4	5.4	6.4	5.4	6.4
18	28.8	27.4	26.8	27.8	27.8	27.8	27.8
19	33.4	35.0	36.8	35.0	36.8	37.0	37.0
20	26.8	26.9	27.1	27.1	27.4	27.7	28.3
21	27.2	29.1	29.1	30.4	30.4	30.9	30.9
22	21.0	22.7	23.5	23.6	23.6	25.0	25.0
23	12.8	12.6	12.6	13.4	14.0	14.3	14.3
24	10.8	10.2	10.7	12.4	12.4	13.3	13.3
25-29	3.8	3.6	3.6	3.7	3.6	4.5	4.7
30-34	1.6	1.6	1.6	1.6	1.6	1.7	1.8
35-44	1.1	1.1	1.1	1.1	1.1	1.1	1.1
Part-time:							
16	0.3	0.3	0.3	0.3	0.3	0.3	0.3
17	0.0	0.3	0.3	0.3	0.3	0.3	0.3
18	4.0	4.0	4.0	4.0	4.0	4.6	4.6
19	4.6	4.2	4.2	4.8	4.8	4.8	4.8
20	5.3	5.4	5.4	6.0	6.0	6.0	6.0
21	5.3	4.9	4.9	5.8	6.0	6.1	6.1
22	9.8	9.6	9.6	10.7	10.7	11.4	11.4
23	5.9	5.9	5.9	6.3	6.3	6.4	6.4
24	5.0	5.0	5.0	5.4	5.4	5.9	5.9
25-29	5.7	6.0	6.2	6.5	7.0	6.6	7.1
30-34	4.4	4.5	4.5	5.1	5.1	5.4	5.4
35-44	3.8	3.9	3.9	3.9	3.9	3.9	3.9
Women							
Full-time:							
16	0.1	0.1	0.1	0.1	0.1	0.1	0.1
17	5.4	5.0	5.0	5.6	6.0	5.6	6.0
18	36.0	34.6	34.6	35.4	35.2	36.8	36.8
19	37.6	36.5	36.5	38.3	38.3	39.8	39.8
20	33.1	32.1	32.1	32.6	32.6	34.6	34.6
21	28.8	31.4	31.5	31.4	31.5	31.7	31.7
22	16.8	16.5	16.5	17.3	17.3	17.6	17.6
23	14.0	13.4	13.4	14.1	14.1	15.0	15.0
24	9.4	9.5	9.5	10.2	10.2	11.0	11.0
25-29	3.6	3.6	3.6	3.8	3.8	4.0	4.0
30-34	2.1	2.1	2.1	2.1	2.1	2.2	2.0
35-44	1.9	2.0	2.0	2.0	2.0	2.0	2.0
Part-time:							
16	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17	0.0	0.3	0.3	0.3	0.3	0.3	0.3
18	5.2	5.2	5.2	5.4	5.4	5.6	5.6
19	5.5	5.4	5.4	5.7	5.7	6.0	6.0
20	8.7	8.2	8.2	9.0	9.0	10.8	10.8
21	7.6	7.2	7.2	8.0	8.0	9.2	9.2
22	11.5	11.2	11.2	12.3	12.3	13.2	13.2
23	9.6	10.1	10.1	11.7	11.7	12.6	12.6
24	6.5	6.4	6.4	7.0	7.0	7.3	7.3
25-29	7.1	7.3	7.3	7.5	7.5	7.7	7.7
30-34	5.3	5.4	5.4	5.7	5.7	5.7	5.7
35-44	7.0	7.0	7.0	7.8	7.8	8.1	8.1

Table A1.4.—Equations for selected college enrollment rates of men, by age and attendance status

	Equation	R^2	Durbin-Watson statistic [1]	Estimation technique
RTFT18M	= 0.52 - 0.00007P18M - 0.005UR1619 (-2.8) (-3.7)	0.56	0.9	OLS [2]
RTPT18M	= -0.02 + 0.0011UR1619 + 0.000003PCI87 (3.5) (4.7)	0.73	2.5	OLS [2]
RTFT19M	= 0.54 - 0.00010P19M - 0.002UR1619 (-3.4) (-1.3)	0.53	1.7	OLS [2]
RTPT19M	= -0.028 + 0.0010UR1619 + 0.0000004PCI87 (2.6) (5.1)	0.71	2.3	OLS [2]
RTPT20M	= -0.016 + 0.0000005PCI87 (7.3)	0.69	1.7	OLS [2]
RTPT21M	= -0.0082 + 0.0000004PCI87 (6.0)	0.60	0.9	OLS [2]

R^2 = Coefficient of determination.

[1] For an explanation of the Durbin-Watson statistic, see J. Johnston, *Econometric Methods*, New York: McGraw-Hill, 1972, pages 251–252.

[2] OLS equals Ordinary Least Squares.

Where:

RTFT18M = Enrollment rate of 18-year-old men enrolled full- time
RTPT18M = Enrollment rate of 18-year-old men enrolled part- time
RTFT19M = Enrollment rate of 19-year-old men enrolled full- time
RTPT19M = Enrollment rate of 19-year-old men enrolled part- time
RTPT20M = Enrollment rate of 20-year-old men enrolled part- time
RTPT21M = Enrollment rate of 21-year-old men enrolled part- time
P18M = Population of 18-year-old men
P19M = Population of 19-year-old men
UR1619 = Unemployment rate of 16- to 19-year-olds
PCI87 = Disposable income per capita in 1986–87 dollars

NOTE: Numbers in parentheses are t-statistics. The time period of observations used in the equations is from 1967 to 1992.

Table A1.5.—Equation for selected college enrollment rates of women, by age and attendance status

		Equation	R^2	Durbin-Watson statistic [1]	Estimation technique
RTFT18W	=	0.38 - 0.00007P18W + 0.000007PCI87 (-3.2) (3.4)	0.57	2.5	OLS [2]
RTPT18W	=	-0.011 + 0.000004PCI87 (6.7)	0.65	1.7	OLS [2]
RTFT19W	=	0.17 - 0.00006P19W + 0.00002PCI87 (-2.6) (9.4)	0.80	2.0	OLS [2]
RTFT21W	=	0.048 - 0.000063P21W + 0.00002PCI87 (-2.3) (9.0)	0.79	1.4	OLS [2]

R^2 = Coefficient of determination.

[1] For an explanation of the Durbin-Watson statistic, see J. Johnston, *Econometric Methods*, New York: McGraw-Hill, 1972, pages 251–252.

[2] OLS equals Ordinary Least Squares.

Where:

RTFT18W =Enrollment rate of 18-year-old women enrolled full- time
RTPT18W =Enrollment rate of 18-year-old women enrolled part- time
RTFT19W =Enrollment rate of 19-year-old women enrolled full- time
RTFT21W =Enrollment rate of 21-year-old women enrolled full- time
P18W =Population of 18-year-old women
P19W =Population of 19-year-old women
P21W =Population of 21-year-old women
PCI87 =Disposable income per capita in 1986–87 dollars

NOTE: Numbers in parentheses are t-statistics. The time period of observations used in the equations is from 1967 to 1992.

Table A1.6.—Enrollment rates in public schools, by grade level

Grade level	Population base age	1992	Projected	
			2000	2005
Kindergarten	5	100.3	98.7	98.7
Grade 1	6	95.6	96.3	96.3
Elementary ungraded and special	5–13	1.6	1.7	1.7
Secondary ungraded and special	14–17	1.9	1.9	1.9
Postgraduate	18	0.4	0.3	0.3

Table A1.7.—Public school grade retention rates

Grade	1992	Projected	
		2000	2005
1 to 2	96.5	95.8	95.8
2 to 3	100.1	100.1	100.1
3 to 4	100.2	100.3	100.3
4 to 5	100.3	100.4	100.4
5 to 6	101.1	101.2	101.2
6 to 7	101.8	102.4	102.4
7 to 8	98.3	98.3	98.3
8 to 9	111.0	110.7	110.7
9 to 10	91.4	91.9	91.9
10 to 11	91.1	91.1	91.1
11 to 12	92.0	91.3	91.3

Table A1.8.—Full-time enrollment, by level enrolled and type of institution, as a percent of total enrollment, for each age and sex classification

Age	Men			Women		
	1992	2000	2005	1992	2000	2005
			Undergraduate, 4-year institutions			
16–17 years old	69.2	70.2	70.2	63.8	64.3	64.3
18–19 years old	64.4	65.6	65.6	69.0	69.0	69.0
20–21 years old	79.5	79.8	79.8	76.2	80.0	80.0
22–24 years old	64.9	65.9	65.9	65.9	62.4	62.4
25–29 years old	41.6	40.9	40.9	35.9	38.5	38.5
30–34 years old	27.0	28.2	28.2	50.3	42.4	42.4
35 years and over	35.4	31.8	31.8	39.1	40.6	40.6
			Undergraduate, 2-year institutions			
16–17 years old	30.8	29.7	29.7	36.2	35.7	35.7
18–19 years old	35.6	34.4	34.4	31.0	31.0	31.0
20–21 years old	20.5	20.2	20.2	23.8	20.1	20.1
22–24 years old	17.6	16.5	16.5	18.0	17.6	17.6
25–29 years old	13.0	15.5	15.5	24.8	26.4	26.4
30–34 years old	25.0	21.3	21.3	40.4	39.7	39.7
35 years and over	26.3	26.7	26.7	28.8	32.0	32.0
			Postbaccalaureate, 4-year institutions			
16–17 years old	—	—	—	—	—	—
18–19 years old	—	—	—	—	—	—
20–21 years old	—	—	—	—	—	—
22–24 years old	17.4	17.6	17.6	16.0	20.0	20.0
25–29 years old	45.4	43.5	43.5	39.3	35.2	35.2
30–34 years old	47.9	50.4	50.4	9.3	18.0	18.0
35 years and over	38.4	41.4	41.4	32.1	27.4	27.4

—Not applicable.

NOTE: Projections shown for 2000 and 2005 were adjusted to add to 100 percent before computing projections shown in tables 3 through 22.

Table A1.9.—Part-time enrollment, by level enrolled and type of institution, as a percent of total enrollment, for each age and sex classification

Age	Men			Women		
	1992	2000	2005	1992	2000	2005
Undergraduate, 4-year institutions						
16–17 years old	0.0	6.9	6.9	0.0	5.4	5.4
18–19 years old	27.4	20.6	20.6	11.1	13.6	13.6
20–21 years old	19.5	20.2	20.2	23.4	24.3	24.3
22–24 years old	32.0	32.7	32.7	31.4	30.2	30.2
25–29 years old	27.9	28.9	28.9	26.7	27.6	27.6
30–34 years old	27.9	27.7	27.7	26.1	26.6	26.6
35 years and over	25.1	27.6	27.6	25.8	26.2	26.2
Undergraduate, 2-year institutions						
16–17 years old	93.2	87.0	87.0	0.0	29.0	29.0
18–19 years old	64.5	72.4	72.4	82.9	81.0	81.0
20–21 years old	72.8	73.0	73.0	70.1	69.7	69.7
22–24 years old	55.4	55.1	55.1	55.0	56.1	56.1
25–29 years old	55.4	53.3	53.3	53.7	53.2	53.2
30–34 years old	49.3	50.0	50.0	57.6	57.0	57.0
35 years and over	52.4	47.9	47.9	54.8	53.7	53.7
Postbaccalaureate, 4-year institutions						
16–17 years old	6.8	6.1	6.1	0.0	1.6	1.6
18–19 years old	8.1	6.9	6.9	6.0	5.4	5.4
20–21 years old	7.7	6.8	6.8	6.5	6.0	6.0
22–24 years old	12.6	12.2	12.2	13.6	13.7	13.7
25–29 years old	16.7	17.8	17.8	19.6	19.2	19.2
30–34 years old	22.8	22.3	22.3	16.2	16.4	16.4
35 years and over	22.5	24.4	24.4	19.4	20.0	20.0

NOTE: Projections shown for 2000 and 2005 were adjusted to add to 100 percent before computing projections shown in tables 3 through 22.

Table A1.10.—Public college enrollment as a percent of total enrollment, by attendance status, sex, level enrolled, and by type of institution

Enrollment category	Men			Women		
	1992	2000	2005	1992	2000	2005
Full-time, undergraduate, 4-year institutions	69.7	69.7	69.7	68.6	68.9	68.9
Part-time, undergraduate, 4-year institutions	72.4	72.3	72.3	69.1	69.7	69.7
Full-time, undergraduate, 2-year institutions	92.2	91.8	91.8	92.0	90.6	90.6
Part-time, undergraduate, 2-year institutions	98.0	97.7	97.7	98.0	98.1	98.1
Full-time, postbaccalaureate, 4-year institutions	56.1	56.2	56.2	58.9	59.3	59.3
Part-time, postbaccalaureate, 4-year institutions	58.3	58.6	58.6	65.0	66.1	66.1

Table A1.11.—Graduate enrollment as a percent of total postbaccalaureate enrollment, by sex and attendance status, and by type and control of institution

Enrollment categoy	Men			Women		
	1992	2000	2005	1992	2000	2005
Full-time, 4-year, public	78.4	77.0	77.0	81.6	81.0	81.0
Part-time, 4-year, public	98.8	98.9	98.9	99.2	99.4	99.4
Full-time, 4-year, private	59.3	58.0	58.0	67.2	66.0	66.0
Part-time, 4-year, private	91.8	91.7	91.7	95.7	95.6	95.6

Table A1.12.—Full-time-equivalent of part-time enrollment as a percent of part-time enrollment, by level enrolled and by type and control of institution

Enrollment category	1992	2000	2005
Public, 4-year, undergraduate	40.0	40.0	40.0
Public, 2-year, undergraduate	33.6	33.6	33.6
Private, 4-year, undergraduate	40.0	39.9	39.9
Private, 2-year, undergraduate	39.7	39.5	39.5
Public, 4-year, graduate	36.3	36.2	36.2
Private, 4-year, graduate	38.2	38.1	38.1
Public, 4-year, first-professional	50.0	54.3	54.3
Private, 4-year, first-professional	54.2	55.3	55.3

Table A1.13.—Enrollment (assumptions)

Variables	Assumptions	Alternatives	Tables
Elementary and Secondary enrollment	Age-specific enrollment rates will remain constant at levels consistent with the most recent rates.	Middle (no alternatives)	1, 2
	Public enrollment rates and public grade retention rates will remain constant at levels consistent with the most recent rates.	Middle (no alternatives)	1, 2
	The percentage of 7th and 8th grade public students enrolled in school organized as secondary schools will remain constant at levels consistent with the most recent rates.	Middle (no alternatives)	2
College full-time and part-time enrollment, by age			
Men	Age-specific enrollment rates for the younger age cohorts will increase over the projection period, while those for the older age groups are expected to remain constant at levels consistent with the most recent rates or increase slightly.	Middle	3–5 9–16
	Age-specific enrollment rates will equal the middle alternative rate or change at a slower rate.	Low	3–5 9–16
	Age-specific enrollment rates will either equal the middle alternative or increase at a faster rate, based on past trends.	High	3–5 9–16
Women	Age-specific enrollment rates for the younger age cohorts will increase over the projection period, while those for the older age groups are expected to increase slightly.	Middle	3–5 9–16
	Age-specific enrollment rates will equal the middle alternative rate or change at a slower rate.	Low	3–5 9–16
	Age-specific enrollment rates will either equal the middle alternative or increase at a faster rate, based on past trends.	High	3–5 9–16
College enrollment, by sex, attendance status, and level enrolled by student, and by type of institution	For each group and for each attendance status separately, enrollment by sex and level enrolled by student, and by type of institution as a percent of total enrollment, will follow past trends through 2005. For each age group and attendance status category, the restriction that the sum of the percentages must equal 100 percent was applied.	High, middle, and low	3–5 9–16
College enrollment, by control of institution	For each enrollment category, by sex, attendance status, and level enrolled by student, and by type of institution, public enrollment as a percent of total enrollment will remain constant at levels consistent with the most recent rates.	High, middle, and low	3–5 9–16
Graduate enrollment	For each enrollment category, by sex and attendance status of student, and by type and control of institution, graduate enrollment as a percent of postbaccalaureate enrollment will remain constant at levels consistent with the most recent rates.	High, middle, and low	17
Full-time-equivalent of part-time enrollment	For each enrollment category, by type and control of institution and level enrolled by student, the percent that full-time-equivalent of part-time enrollment is of part-time enrollment will remain constant at levels consistent with the most recent rates.	High, middle, and low	23–25

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Table A1.14.—Enrollment (estimation methods)

Variables	Years	Estimation method	Tables
Enrollment in private elementary and secondary schools, by level	1988 1989 1990	Grade-by-grade data for private elementary, secondary, and combined schools were aggregated to estimate private school enrollment by grade level.	1 2
Enrollment in institutions of higher education, by age and attendance status	1985 1990 1993	For each sex, enrollment data from the Bureau of Census by individual ages and by attendance status for 2-year age groups were combined by assuming that within the 2-year age groups, age and attendance status were distributed independently. The resultant enrollment estimates by age and attendance status were then adjusted to NCES enrollment counts by attendance status.	6 7 8

Table A1.15—Number of years, projection methods, and smoothing constants used to project public school enrollments and high school graduates, by state

Projected state variable	Number of years (1970–1992)	Projection method	Smoothing constant	Choice of smoothing constant
Enrollment rates	23	Single exponential smoothing	0.4	Empirical research
Grade retention rates	23	Single exponential smoothing	0.4	Empirical research
Graduates/grade 12 enrollment	23	Single exponential smoothing	0.4	Empirical research

Table A1.16—Weights used to combine the enrollment projections, by projection method and lead time

Projection method	Lead time, in years											
	1	2	3	4	5	6	7	8	9	10	11	12
Grade retention	1	8/9	7/9	6/9	5/9	4/9	3/9	2/9	1/9	0	0	0
Enrollment rate	0	1/9	2/9	3/9	4/9	5/9	6/9	7/9	8/9	1	1	1

A2. High School Graduates

National

Projections of public high school graduates were developed in the following manner. The number of public high school graduates was expressed as a percent of grade 12 enrollment in public schools for 1972 to 1992. This percent was projected using single exponential smoothing and applied to projections of grade 12 enrollment to yield projections of high school graduates in public schools. (The dropout rate is not related to this percent. This percent does not make any assumptions regarding the dropout rate.) The grade 12 enrollment was projected based on grade-by-grade retention rates and population projections developed by the Bureau of the Census. This percent was assumed to remain constant at levels consistent with the most recent rates. This method assumes that past trends in factors affecting graduation will continue over the projection period.

Projections of private high school graduates were derived in the following manner. For 1992–93, the ratio of private high school graduates to public school graduates was calculated. The ratio for 1992–93 was held constant over the projection period. It was then applied to projections of public high school graduates to yield projections of private high school graduates. This method assumes that the future pattern of private high school graduates will be the same as that of public high school graduates. The reader should be aware that a number of factors could alter the assumption of a constant ratio over the projection period.

Projection Accuracy

An analysis of projections from models used in the past 11 editions of *Projections of Education Statistics* indicates that the mean absolute percentage errors (MAPEs) for projections of public high school graduates were 0.6 percent for 1 year ahead, 1.1 percent for 2 years ahead, and 1.8 percent for 5 years ahead. For the 2-year-ahead prediction, this means that one would expect the projection to be within 1.1 percent of the actual value, on the average.

State-Level

This edition contains projections of high school graduates from public schools by state from 1993–94 to 2004–2005. Public school graduate data from the National Center for Education Statistics' Common Core of Data survey for 1969–70 to 1992–93 were used to develop these projections. This survey does not collect graduate data for private schools.

Projections of public high school graduates by state were developed in the following manner. For each state, the number of public high school graduates was expressed as a percent of grade 12 enrollment in public schools for 1979 to 1992. This percent was projected using single exponential smoothing and applied to projections of grade 12 enrollment to yield projections of high school graduates in public schools. Projections of grade 12 enrollment were developed based on the grade retention method discussed in section A1, Enrollment. This percent was assumed to remain constant at levels consistent with the most recent rates. This method assumes that past trends in factors affecting public high school graduates will continue over the projection period.

A3. Earned Degrees Conferred

Projections of associate, bachelor's, master's, doctor's, and first-professional degrees by sex were based on demographic models that relate degree awards to college-age populations and college enrollment by level enrolled and attendance status.

Associate Degrees

Associate degree projections by sex were based on undergraduate enrollment by attendance status in 2-year institutions. Results of the regression analysis used to project associate degrees by sex are shown in table A3.1.

Bachelor's Degrees

Bachelor's degree projections by sex were based on the 18- to 24-year-old population, 25- to 34-year-old population, and undergraduate enrollment by attendance status in 4-year institutions. Results of the regression analysis used to project bachelor's degrees by sex are shown in table A3.2.

Master's Degrees

Master's degree projections by sex were based on the 35- to 44-year-old population and graduate enrollment by attendance status in 4-year institutions. Results of the regression analysis used to project master's degrees by sex are shown in table A3.3.

Doctor's Degrees

Doctor's degree projections for women were based on graduate enrollment by attendance status in 4-year institutions and a time trend variable. Results of the regression analysis used to project doctor's degrees for women are shown in table A3.4. Projections of doctor's degrees awarded to men were calculated as the average of the low and high alternatives. (The low alternative assumes that doctor's degrees awarded to men will decrease by 800 degrees each year through 2004–2005. The high alternative assumes that doctor's degrees awarded to men will remain around 28,000 degrees over the projection period.)

First-Professional Degrees

First-professional degree projections by sex were based on first-professional enrollment by attendance status in 4-year institutions. Results of the regression analysis used to project first-professional degrees by sex are shown in table A3.5.

Methodological Tables

These tables describe equations used to calculate projections (tables A3.1 through A3.5), and basic assumptions underlying projections (table A3.6).

Projection Accuracy

An analysis of projection errors from similar models used in the past nine editions of *Projections of Education Statistics* indicates that mean absolute percentage errors (MAPEs) for bachelor's degree projections were 2.2 percent for 1 year out, 3.7 percent for 2 years out, and 6.1 percent for 5 years out. For the 1-year-out prediction, this means that one would expect the projection to be within 2.2 percent of the actual value, on the average. For first-professional degrees, the MAPEs were 2.7, 3.3, and 1.3 percent, respectively. For doctor's degrees, based on the past eight editions of *Projections of Education Statistics*, the MAPEs were 2.7, 4.4, and 6.6 percent, respectively. MAPEs for master's degrees, based on the past seven editions of *Projections of Education Statistics*, were 2.6, 4.9, and 9.1, respectively. MAPEs for associate degrees, based on the past five editions of *Projections of Education Statistics*, were 2.2 percent for 1 year out, 3.4 percent for 2 years out, and 4.4 percent for 3 years out.

Table A3.1.—Equations for associate degrees

		Equation	R^2	Durbin-Watson statistic [1]	Estimation technique
Men	ASSOCM	= 102.636 + 75.0UGFTM2 + 25.6UGPTM2 (1.5) (1.3)	0.70	1.6	AR1 [2]
Women	ASSOCW	= 24,018.6 + 260.9UGFTW2 (14.9)	0.98	1.5	AR1 [3]

R^2 = Coefficient of determination.

[1] For an explanation of the Durbin-Watson statistic, see J. Johnston, *Econometric Methods*, New York: McGraw-Hill, 1972, pages 251–252.

[2] AR1 equals an estimation procedure for correcting the problem of first-order autocorrelation. The maximum likelihood procedure of the Regression Analysis of Time Series (RATS) software was used to estimate rho. In this equation, rho is equal to 0.60 with a t-statistic of (2.5). For a general discussion of the problem of autocorrelation, and the method used to forecast in the presence of autocorrelation, see G. Judge, W. Hill, R. Griffiths, H. Lutkepohl, and T. Lee, *The Theory and Practice of Econometrics*, New York: John Wiley and Sons, 1985, pages 315-318.

[3] AR1 equals an estimation procedure for correcting the problem of first-order autocorrelation. Specifically, the maximum likelihood procedure of the statistical program RATS was used to estimate rho. In this equation, rho is equal to 0.68 with a t-statistic of (3.6).

Where:

ASSOCM =Number of associate degrees awarded to men
ASSOCW =Number of associate degrees awarded to women

UGFTM2 =Full-time male undergraduate enrollment in 2-year institutions lagged 2 years
UGPTM2 =Part-time male undergraduate enrollment in 2-year institutions lagged 2 years
UGFTW2 =Full-time female undergraduate enrollment in 2-year institutions lagged 2 years

NOTE: Numbers in parentheses are t-statistics. The time period of observations used in the equations is from 1970–71 to 1991–92.

Table A3.2.—Equations for bachelor's degrees

		Equation	R^2	Durbin-Watson statistic [1]	Estimation technique
Men	BACHM	= 183.244 − 12.4P1824M − 1.4P2534M (−4.6) (−1.0) + 219.4UGFT4M − 5.0UGPT4M (3.9) (−0.0)	0.71	1.2	OLS [2]
Women	BACHW	= 252.715 − 19.3P1824W + 239.0UGFT4W (−3.7) (15.0)	0.98	1.4	AR1 [3]

R^2 = Coefficient of determination.

[1] For an explanation of the Durbin-Watson statistic, see J. Johnston, *Econometric Methods*, New York: McGraw-Hill, 1972, pages 251–252.

[2] OLS equals Ordinary Least Squares.

[3] AR1 equals an estimation procedure for correcting the problem of first-order autocorrelation. The maximum likelihood procedure of the Regression Analysis of Time Series (RATS) software was used to estimate rho. In this equation, rho is equal to 0.72 with a t-statistic of (4.4). For a general discussion of the problem of autocorrelation, and the method used to forecast in the presence of autocorrelation, see G. Judge, W. Hill, R. Griffiths, H. Lutkepohl, and T. Lee, *The Theory and Practice of Econometrics*, New York: John Wiley and Sons, 1985, pages 315–318.

Where:

BACHM =Number of bachelor's degrees awarded to men
BACHW =Number of bachelor's degrees awarded to women
P1824M =Population of 18- to 24-year-old men
P1824W =Population of 18- to 24-year-old women
P2534M =Population of 25- to 34-year-old men
UGFT4M =Full-time male undergraduate enrollment in 4-year institutions lagged 2 years
UGPT4M =Part-time male undergraduate enrollment in 4-year institutions lagged 2 years
UGFT4W =Full-time female undergraduate enrollment in 4-year institutions lagged 3 years

NOTE: Numbers in parentheses are t-statistics. The time period of observations used in the equations is from 1970–71 to 1991–92.

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Table A3.3.—Equations for master's degrees

		Equation	R^2	Durbin-Watson statistic [1]	Estimation technique
Men	MASTM	= 30,681.1 - 3.9P3544M + 1,105.3GFTM (-4.4) (4.3)	0.47	1.2	OLS [2]
		- 349.9GPTM (-3.0)			
Women	MASTW	= 19,467.9 + 0.6P3544W + 260.3GPTW (0.3) (4.4)	0.95	1.8	AR1 [3]

R^2 = Coefficient of determination.

[1] For an explanation of the Durbin-Watson statistic, see J. Johnston, *Econometric Methods*, New York: McGraw-Hill, 1972, pages 251–252.

[2] OLS equals Ordinary Least Squares.

[3] AR1 equals an estimation procedure for correcting the problem of first-order autocorrelation. The maximum likelihood procedure of the Regression Analysis of Time Series (RATS) software was used to estimate rho. In this equation, rho is equal to 0.78 with a t-statistic of (4.3). For a general discussion of the problem of autocorrelation, and the method used to forecast in the presence of autocorrelation, see G. Judge, W. Hill, R. Griffiths, H. Lutkepohl, and T. Lee, *The Theory and Practice of Econometrics*, New York: John Wiley and Sons, 1985, pages 315-318.

Where:

MASTM	=Number of master's degrees awarded to men
MASTW	=Number of master's degrees awarded to women
P3544M	=Population of 35- to 44-year-old men
P3544W	=Population of 35- to 44-year-old women
GFTM	=Full-time male graduate enrollment lagged 2 years
GPTM	=Part-time male graduate enrollment lagged 2 years
GPTW	=Part-time female graduate enrollment

NOTE: Numbers in parentheses are t-statistics. The time period of observations used in the equations is from 1970–71 to 1991–92.

Table A3.4.—Equation for doctor's degrees

			Equation	R^2	Durbin-Watson statistic [1]	Estimation technique
Women	DOCW	=	3,247.2 + 4.4GPTW + 415.7TIME (1.2) (7.8)	0.99	1.6	AR1 [2]

R^2 = Coefficient of determination.

[1] For an explanation of the Durbin-Watson statistic, see J. Johnston, *Econometric Methods*, New York: McGraw-Hill, 1972, pages 251–252.

[2] AR1 equals an estimation procedure for correcting the problem of first-order autocorrelation. The maximum likelihood procedure of the Regression Analysis of Time Series (RATS) software was used to estimate rho. In this equation, rho is equal to 0.68 with a t-statistic of (3.7). For a general discussion of the problem of autocorrelation, and the method used to forecast in the presence of autocorrelation, see G. Judge, W. Hill, R. Griffiths, H. Lutkepohl, and T. Lee, *The Theory and Practice of Econometrics*, New York: John Wiley and Sons, 1985, pages 315–318.

Where:

DOCW =Number of doctor's degrees awarded to women
GPTW =Part-time female graduate enrollment
TIME =Time trend, 1970–71 equals 1

NOTE: Numbers in parentheses are t-statistics. The time period of observations used in the equations is from 1970–71 to 1991–92.

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Table A3.5.—Equations for first-professional degrees

		Equation	R^2	Durbin-Watson statistic [1]	Estimation technique
Men	FPROM	= 5,381.3 + 262.4FPFTM (8.0)	0.91	2.0	AR1 [2]
Women	FPROW	= -1,542.7 + 263.1FPFTW + 371.9FPPTW (11.8) (2.6)	0.99	1.8	OLS [3]

R^2 = Coefficient of determination.

[1] For an explanation of the Durbin-Watson statistic, see J. Johnston, *Econometric Methods*, New York: McGraw-Hill, 1972, pages 251–252.

[2] AR1 equals an estimation procedure for correcting the problem of first-order autocorrelation. The maximum likelihood procedure of the Regression Analysis of Time Series (RATS) software was used to estimate rho. In this equation, rho is equal to 0.52 with a t-statistic of (2.5). For a general discussion of the problem of autocorrelation, and the method used to forecast in the presence of autocorrelation, see G. Judge, W. Hill, R. Griffiths, H. Lutkepohl, and T. Lee, *The Theory and Practice of Econometrics*, New York: John Wiley and Sons, 1985, pages 315-318.

[3] OLS equals Ordinary Least Squares.

Where:

FPROM =Number of first-profesional degrees awarded to men
FPROW =Number of first-professional degrees awarded to women
FPFTM =Full-time male first-professional enrollment lagged 2 years
FPFTW =Full-time female first-professional enrollment lagged 1 year
FPPTW =Part-time female first-professional enrollment lagged 2 years

NOTE: Numbers in parentheses are t-statistics. The time period of observations used in the equations is from 1970–71 to 1991–92.

Table A3.6.— Earned degrees conferred (assumptions)

Variables	Assumptions	Alternatives	Tables
Associate degrees			
Men	The number of associate degrees awarded to men is a linear function of full-time and part-time undergraduate enrollment in 2-year institutions lagged 2 years. This relationship will continue through 2004–2005.	Middle	27
Women	The number of associate degrees awarded to women is a linear function of full-time undergraduate enrollment in 2-year institutions lagged 2 years. This relationship will continue through 2004–2005.	Middle	27
Bachelor's degrees			
Men	The number of bachelor's degrees awarded to men is a linear function of full-time and part-time undergraduate enrollment in 4-year institutions lagged 2 years, the 18- to 24-year-old population, and 25- to 34-year-old population. This relationship will continue through 2004–2005.	Middle	28
Women	The number of bachelor's degrees awarded to women is a linear function of full-time undergraduate enrollment in 4-year institutions lagged 3 years and the 18- to 24-year-old population. This relationship will continue through 2004–2005.	Middle	28
Master's degrees			
Men	The number of master's degrees awarded to men is a linear function of full-time and part-time graduate enrollment lagged 2 years and the 35- to 44-year-old population. This relationship will continue through 2004–2005.	Middle	29
Women	The number of master's degrees awarded to women is a linear function of part-time graduate enrollment and the 35- to 44-year-old population. This relationship will continue through 2004–2005.	Middle	29
Doctor's degrees			
Men	The number of doctor's degrees awarded to men equals the average of the low and high alternatives.	Middle	30
Women	The number of doctor's degrees awarded to women is a linear function of part-time graduate enrollment and time. This relationship will continue through 2004–2005.	Middle	30
First-professional degrees			
Men	The number of first-professional degrees awarded to men is a linear function of full-time first-professional enrollment lagged 2 years. This relationship will continue through 2004–2005.	Middle	31
Women	The number of first-professional degrees awarded to women is a linear function of full-time first-professional enrollment lagged 1 year and part-time first-professional enrollment lagged 2 years. This relationship will continue through 2004–2005.	Middle	31

A4. Classroom Teachers

Public Classroom Teachers

Numbers of public elementary and secondary classroom teachers were projected using a model similar to that used in *Projections of Education Statistics to 2004*, only the coefficients were re-estimated. The number of public school teachers was projected separately for the elementary and secondary levels. The elementary teachers were modeled as a function of disposable income per capita, local education revenue receipts from state sources per capita, and elementary enrollment. Secondary teachers were modeled as a function of disposable income per capita, education revenue receipts from state sources per capita (lagged 3 years), and secondary enrollment. Both disposable income per capita and local education revenue receipts from state sources were in constant 1986–87 dollars.

The equations in this section should be viewed as forecasting rather than structural equations, as the limitations of time and available data precluded the building of a large-scale, structural teacher model. The particular equations shown were selected on the basis of their statistical properties, such as coefficients of determination (R^2s), the t-statistics of the coefficients, the Durbin-Watson statistic, and residual plots.

The multiple regression technique will yield good forecasting results only if the relationships that existed among the variables in the past continue throughout the projection period.

The public elementary classroom teacher model is:

$$\text{ELTCH} = b_0 + b_1\text{PCI87} + b_2\text{SGRANT} + b_3\text{ELENR}$$

where:

ELTCH is the number of public elementary classroom teachers.

PCI87 is disposable income per capita in 1986–87 dollars;

SGRANT is the level of education revenue receipts from state sources per capita in 1986–87 dollars; and

ELENR is the number of students enrolled in public elementary schools.

Each variable affects the number of teachers in the expected way. As people receive more income, the state spends more money on education, and as enrollment increases, the number of elementary teachers hired increases.

The public secondary classroom teacher model is:

$$\text{SCTCH} = b_0 + b_1\text{PCI87} + b_2\text{SGRANT3} + b_3\text{SCENR}$$

where:

SCTCH is the number of public secondary classroom teachers;

PCI87 is disposable income per capita in 1986–87 dollars;

SGRANT3 is the level of education revenue receipts from state sources per capita in 1986–87 dollars, lagged 3 years, and;

SCENR is the number of students enrolled in public secondary schools.

Each variable affects the number of teachers in the expected way. As people receive more income, the state spends more money on education, and as enrollment increases, the number of secondary teachers hired increases.

Table A4.1 summarizes the results for the elementary and secondary public teacher models.

Enrollment is by organizational level, not by grade level. Thus, secondary enrollment is not the same as grade 9–12 enrollment because some states count some grade 7 and 8 enrollment as secondary. The distribution of the number of teachers is by organizational level, not by grade span.

Private Classroom Teachers

Projections of private classroom teachers were derived in the following manner. For 1993, the ratio of private school teachers to public school teachers was calculated by organizational level. These 1993 ratios were held constant over the projection period. The ratios were then applied to projections of public school teachers by organizational level to yield projections of private school teachers. This method assumes that the future pattern in the trend of private school teachers will be the same as that for public school teachers. The reader is cautioned that a number of factors could alter the assumption of constant ratios over the projection period.

The total number of public school teachers, enrollment by organizational level, and education revenue receipts from state sources used in these projections were from the Common Core of Data (CCD) survey conducted by NCES. The proportion of teachers by organizational level was taken from the National Education Association and then applied to the total number of teachers from CCD to produce the number of teachers by organizational level.

Disposable income was obtained from DRI/McGraw-Hill and population data were from the Bureau of the Census.

Projection Accuracy

An analysis of projection errors from the past 11 editions of *Projections of Education Statistics* indicated that the mean absolute percentage errors (MAPEs) for projections of classroom teachers in public elementary and secondary schools were 0.9 percent for 1 year out, 1.3 percent for 2 years out, 2.9 percent for 5 years out, and 3.2 percent for 10 years out. For the 2-year-ahead prediction, this means that one would expect the projection to be within 1.3 percent of the actual value, on the average.

Table A4.1.—Equations for public elementary and secondary classroom teachers

		Equation	R^2	Durbin-Watson statistic [1]	Estimation technique
Elementary	ELTCH	= - 324.6 + 0.057PCI87 + 0.6SGRANT (5.6) (1.6) + 0.03ELENR (7.4)	0.99	1.9	AR1 [2]
Secondary	SCTCH	= - 223.8 + 0.04PCI87 + 0.3SGRANT3 (8.5) (2.1) + 0.04SCENR (21.3)	0.98	1.6	OLS [3]

R^2 = Coefficient of determination.

[1] For an explanation of the Durbin-Watson statistic, see J. Johnston, *Econometric Methods*, New York: McGraw-Hill, 1972, pages 251–252.

[2] AR1 equals an estimation procedure for correcting the problem of first-order autocorrelation. The maximum likelihood procedure of the Regression Analysis of Time Series (RATS) software was used to estimate rho. In this equation, rho is equal to 0.46 with a t-statistic of (2.4). For a general discussion of the problem of autocorrelation, and the method used to forecast in the presence of autocorrelation, see G. Judge, W. Hill, R. Griffiths, H. Lutkepohl, and T. Lee, *The Theory and Practice of Econometrics*, New York: John Wiley and Sons, 1985, pages 315-318.

[3] OLS equals Ordinary Least Squares.

Where:

ELTCH	=Number of public elementary classroom teachers
SCTCH	=Number of public secondary classroom teachers
PCI87	=Disposable income per capita in 1986–87 dollars
SGRANT	=Education revenue receipts from state sources per capita
SGRANT3	=Education revenue receipts from state sources per capita lagged 3 years
ELENR	=Number of students enrolled in public elementary schools
SCENR	=Number of students enrolled in public secondary schools

NOTE: Numbers in parentheses are t-statistics. The time period of observations used in the equation for elementary teachers is from 1960 to 1992. The time period used in the equation for secondary teachers is from 1965 to 1992.

A5. Expenditures of Public Elementary and Secondary Schools

Econometric techniques were used to produce the projections for current expenditures and average teacher salaries. The equations in this chapter should be viewed as forecasting equations rather than structural equations. The limitations of time and available data precluded the building of large-scale, structural, models. The particular equations shown were selected on the basis of their statistical properties, such as coefficients of determination (R^2's), the t-statistics of the variables, the Durbin-Watson statistic, and residual plots.

The elementary and secondary education econometric models were selected on the basis of their statistical properties, such as the coefficients of determination (R^2), the t-statistics of the variables, the Durbin-Watson statistic, and residual plots. These econometric models will yield good forecasting results only if the relationships that existed among the variables in the past continue throughout the projection period.

The Elementary and Secondary School Current Expenditure Model

There has been a large body of work, both theoretical and empirical, on the demand for local public services such as education *. The elementary and secondary school current expenditure model is based on this work.

The model that is the basis for the elementary and secondary school current expenditure model has been called the median voter model. In brief, the theory states that spending for each public good in the community (in this case, education), reflects the preferences of the "median voter" in the community. This individual is identified as the voter in the community with the median income and median property value. Hence, the amount of spending in the community reflects the price of education facing the voter with the median income, as well as his income and tastes. There are competing models in which the level of spending reflects the choices of others in the community, such as the "bureaucrats." The median voter model was chosen as the basis of the elementary and secondary school current expenditure model as it has been the one most thoroughly studied.

There have been many empirical studies of the demand for education expenditures using the median voter model. In most instances, researchers have used cross-sectional data. The elementary and secondary school current expenditure model was built on the knowledge gained from these cross-sectional studies and was adapted from them for use in a time series study.

In a median voter model, the demand for education expenditures is typically linked to four different types of variables: 1) measures of the income on the median voter; 2) measures of intergovernmental aid for education going indirectly to the median voter; 3) measures of the price to the median voter of providing one more dollar of education expenditures per pupil; and 4) any other variables that may affect one's tastes for education. The elementary and secondary school current expenditure model contains variables reflecting the first three types of variables. The model is:

$$\ln(\text{CUREXP}) = b_0 + b_1\ln(\text{PCI}) + b_2\ln(\text{SGRANT}) + b_3\ln(\text{ADAPOP})$$

where:

ln indicates the natural log;

CUREXP equals current expenditures of public elementary and secondary schools per pupil in average daily attendance in constant 1982–84 dollars;

PCI equals disposable income per capita in constant 1987 dollars;

SGRANT equals local governments' education revenue receipts from state sources, per capita, in constant 1982–84 dollars; and

ADAPOP equals the ratio of average daily attendance to the population.

The model was estimated using the AR1 model for correcting for autocorrelation. This was done because the test statistics were significantly better than those from the ordinary least squares (OLS) estimation, and the Durbin-Watson statistic was in the inconclusive region when the model was estimated using OLS. This is the third edition of *Projections of Education Statistics* in which this method of estimation, rather than OLS, was used. Ordinary least squares was used in the previous four editions of *Projections of Education Statistics*. The sample period was from 1959–60 to 1991–92. Due to the results of a Box-Cox test for functional form, all variables were placed in log form.

There are potential problems with using a model for local government education expenditures for the nation as a whole. Two such problems concern the variable SGRANT. First, the amount of money which local governments receive for education from state government varies

* For a review and discussion of this literature, see Inman, R. P. (1979), "The fiscal performance of local governments: an interpretive review," in *Current Issues in Urban Economics*, edited by P. Mieszkowski and M. Straszheim, Johns Hopkins Press, Baltimore, Maryland.

substantially by state. Second, the formulas used to apportion state moneys for education among local governments vary by state.

Beginning in 1988–89, there was a major change in the survey form used to collect data on current expenditures. This new survey form produces a more complete measure of current expenditures; therefore, the values for current expenditures are not completely comparable to the previously collected numbers. In a crosswalk study, data for a majority of states were also collected for 1986–87 and 1987–88 that were comparable to data from the new survey form. A comparison of these data with those from the old survey form suggests that the use of the new survey form may have increased the national figure for current expenditures by approximately 1.4 percent over what it would have been if the survey form had not been changed. When the model was estimated, all values for current expenditures before 1988–89 were increased by 1.4 percent.

The results for the model are shown in table A5.1. Each variable affects current expenditures in the direction that would be expected. As people receive more income, either directly (PCI) or from the state government (SGRANT), the level of spending increases. As the number of pupils increases relative to the population (that is, as ADAPOP increases), the level of spending per pupil falls.

From the cross-sectional studies of the demand for education expenditures, we have an estimate of how sensitive current expenditures are to changes in PCI and ADAPOP. We can compare the results from this model with those from the cross-sectional studies. For this model, an increase in PCI of 1 percent, with SGRANT and ADAPOP held constant, would result in an increase of current expenditures per pupil in average daily attendance of approximately 0.60 percent. With PCI and SGRANT held constant, an increase of 1 percent in ADAPOP would result in a decrease in current expenditures per pupil in average daily attendance of approximately 0.35 percent. Both numbers are well within the range of what has been found in other studies.

The results from this model are not completely comparable with those from the previous editions of *Projections of Education Statistics*. First, with this edition, the population number for each school year is the Bureau of the Census's July 1 population number for the upcoming school year. In previous editions, each school year's population number was the average of the DRI/McGraw-Hill's estimated population numbers of each quarter in that school year. Second, there was a change in the definition of the disposable income affecting the projections in *Projections of Education Statistics to 2004* and in this edition.

Projections for total current expenditures were made by multiplying the projections for current expenditures per pupil in average daily attendance by projections for average daily attendance. The projections for total current expenditures were divided by projections for fall enrollment to produce projections of current expenditures per pupil in fall enrollment. Projections were developed in 1982–84 dollars and then placed in 1992–93 dollars using the Consumer Price Index. Current-dollar projections were produced by multiplying the constant-dollar projections by projections for the Consumer Price Index.

Three alternative sets of projections for current expenditures are presented: the middle alternative projections; the low alternative projections; and the high alternative projections. The alternative sets of projections differ because of varying assumptions about the growth paths for disposable income and revenue receipts from state sources.

The alternative sets of projections for the economic variables including disposable income were developed using variations of three economic scenarios developed by DRI for use on its U.S. Quarterly Model. The U.S. Quarterly model is an econometric model of the U.S. economy developed by DRI for the personal computer which projects more than 1,200 economic concepts. Periodically, DRI supplies alternative economic scenarios of the economy, including long-term scenarios. Users have the option of either producing projections directly from the scenarios supplied by DRI or first altering some of the underlying assumptions of the scenarios and then producing the projections. The May 1994 series of long-term scenarios was used as bases for the three sets of alternative economic projections used here, although there were some changes in the underlying assumptions.

DRI's trend scenario was used as a base for the middle alternative projections of the economic variables. DRI's trend scenario depicts a mean of possible paths that the economy could take over the forecast period, barring major shocks. The economy, in this scenario, evolves smoothly, if unspectacularly. The only change from DRI's trend scenario was that the most recent middle set of population projections as developed by the Bureau of the Census was substituted for DRI's population projections.

DRI's pessimistic scenario was used as a base for the low alternative projections. As with the middle set of projections, the Bureau of the Census' recent middle set of population projections was substituted for DRI's population projections. For the low alternative projections, some changes were made in some of DRI's assumptions concerning personal income that resulted in lower projections for disposable income.

Similarly, DRI's optimistic scenario was used as a base for the high alternative projections. The Bureau of the Census' recent middle set of population projection was substituted for DRI's population projections and some changes were made in some of DRI's assumptions concerning personal income that resulted in higher projections for disposable income.

Hence, using DRI's U.S. Quarterly Model and their May 1994 long-term scenarios, three sets of projections, the middle alternative projections, the low alternative projections, and the high alternative projections, were developed for the economic variables.

The May 1994 long-term scenarios of the DRI Quarterly model have projections through the fourth quarter of 2004. Hence, the DRI Quarterly model can be used to produce forecasts through 2003–2004. To extend the current

expenditure projection, the value for current expenditures per pupil in average daily attendence for 2003–2004 were simply multiplied by its growth rate from 2002–2003 to 2003–2004. The projections of the economic variables produced by DRI's U.S. Quarterly Model were extended in a similar fashion.

In the middle alternative projections, disposable income per capita rises each year from 1994–95 to 2004–2005 at rates between 0.7 percent and 1.6 percent. In the low alternative projections, disposable income per capita ranging between -0.4 percent and 1.4 percent and in the high alternative projections disposable income per capita rises at rates between 0.7 percent and 4.0 percent.

The greatest differences among the three alternative projections for the percent changes for disposable income per capita occur in the first years of the projection period. This is because the three alternative sets of projections are based on quite different assumptions for the short term path of the economy. With the middle alternative projections, the economy is in a moderate recovery; with the low alternative projections, the economy is in a brief decline; and with the high alternative projections, the economy is booming. For the later years of the projection period, the economy is assumed to be growing at steady rates for each alternative set of projections. Hence, the percent changes for disposable income per capita (and many other economic variables) are similar for the three alternative sets of projections for the later years of the projection period.

The alternative projections for revenue receipts from state sources were produced using the following model:

$$\text{SGRANT} = b_0 + b_1\text{PERTAX1} + b_2\text{BUSTAX1} + b_3\text{ADAPOP} + b_4\text{ININCR}$$

where:

SGRANT equals local governments' education revenue receipts from state sources, per capita, in constant 1982–84 dollars;

PERTAX1 equals personal taxes and nontax receipts to state and local governments, per capita, in constant 1982–84 dollars lagged one period;

BUSTAX1 equals indirect business taxes and tax accruals, excluding property taxes, to state and local governments, per capita, in constant 1982–84 dollars lagged one period;

ADAPOP equals the ratio of average daily attendance to the population; and

ININCR equals the rate of change in the inflation rate measured by the Consumer Price Index.

This equation was estimated using ordinary least squares for the sample period from 1960–61 to 1991–92. The results for the model are shown in table A5.1.

The values of the coefficients in this model follow expectations. As state governments receive more revenue (higher PERTAX1 and BUSTAX1), they have more money to send to local governments for education. As the enrollment increases relative to the population (higher ADAPOP), so does the amount of aid going to education. Finally, in years with rapidly increasing inflation (higher ININCR), the real dollar values of revenue receipts from state governments to local governments would fall, other things being equal.

The three alternative sets of projections for SGRANT were produced using this model. Each is based on a different set of projections for personal taxes, business taxes, and the rate of change in the inflation rate. The middle set of projections was produced using the values for these variables from the middle set of alternative projections. The low set of projections was produced using the values from the low set of alternative projections and the high set of projections was produced using the values from the high set of alternative projections. In the middle set of projections, personal taxes and nontax receipts increase at rates between 1.7 percent and 3.9 percent and indirect business taxes and tax accruals increase at rates between 0.2 percent and 2.7 percent. In the low set of projections, personal taxes and nontax receipts increase at rates between 0.2 percent and 3.9 percent, and indirect business taxes and tax accruals increase at rates between 0.1 percent and 2.5 percent. In the high set of projections, personal taxes and nontax receipts increase at rates between 1.9 percent and 6.1 percent, and indirect business taxes and tax accruals increase at rates between 0.4 percent and 4.9 percent.

The values for revenue receipts from state sources produced by this model were decreased slightly before being used to produce the current expenditure projections. The values used to produce the current expenditure projections can be found on table B7.

In the middle set of projections, revenue receipts from state sources increase at rates between 0.7 percent and 2.2 percent for the period from 1994–95 to 2004–2005. In the low set of projections, they increase at rates between 0.5 percent and 1.8 percent. In the high set of projections, they increase at rates between 0.8 percent and 4.3 percent.

The Elementary and Secondary Teacher Salary Model

Most studies conducted on teacher salaries, like those on current expenditures, have used cross-sectional data. Unlike current expenditures models, however, the models for teacher salaries from these existing cross-sectional studies cannot easily be reformulated for use with time-series data. One problem is that we do not have sufficient information concerning the supply of qualified teachers who are not presently teaching. Hence, the elementary and secondary salary model contains terms that measure the demand for teachers in the economy.

The elementary and secondary teacher salary model is:

$$SALARY = b_0 + b_1 CUREXP + b_2 ADAPOP + b_3 DIFADA1$$

where:

SALARY equals the average annual salary of teachers in public elementary and secondary schools in constant 1982–84 dollars;

CUREXP equals current expenditures of public elementary and secondary schools per pupil in average daily attendance in constant 1982–84 dollars;

ADAPOP equals the ratio of average daily attendance to the population; and

DIFADA1 equals the change in average daily attendance lagged 1 period.

The model was estimated using the period from 1959–60 to 1991–92 as a sample period. The AR1 model for correcting for autocorrelation was used as the Durbin-Watson statistic was in the inconclusive region when the model was estimated using OLS.

While there are values for teacher salaries through 1993–94, the model was estimated using the period from 1959–60 to 1991–92 as there are values for current expenditures only through 1991–92. The actual values for teacher salaries for 1992–93 and 1993–94, not those estimated using models, appear in table 36. The projected values for teacher salaries for the projections period from 1994–95 to 2004–2005 also are not the numbers which appear in table 36. Rather, three new sets of projections for teacher salaries were calculated using the per cent changes from the original projections. First, for each set of alternative projections, the projected percent change from 1993–94 to 1994–95 was applied to the actual number for 1993–94 to find a new projection for 1994–95. The projected percent changes were then used to produce three new series of teacher salary projections.

Due to the effects caused by the change shown in survey forms, the values for current expenditures for 1959–60 to 1987–88 were increased by 1.4 percent.

The results for this model are also shown in table A5.1.

There is no literature for comparing the sizes of the coefficients. However, the direction of the impact each variable has on salaries is as expected: As the level of spending per pupil increases (higher CUREXP), more teachers can be hired, so demand for teachers increases and salaries increase; as the number of students increases (higher ADAPOP and DIFADA1), demand for teachers increases, so salaries increase.

As with current expenditures, three different scenarios are presented for teacher salaries. The same projections for ADAPOP and DIFADA1 are used for each alternative projection; the sole difference between the projections is in the projection for current expenditures. The middle alternative projection for salaries uses the middle alternative projection for current expenditures. The low alternative projection for salaries uses the low alternative projection for current expenditures. The high alternative projection for salaries uses the high alternative projection for current expenditures.

Current expenditures, average teacher salaries, and the number of teachers are interrelated. Hence, an exercise was conducted to see whether the projections of these three time series were consistent.

The number of teachers was multiplied by the average salary and then divided by current expenditures for every school year from 1979–80 until 2004–2005 (using the middle alternative projection for teachers, salaries, and current expenditures). The resulting value shows the portion of current expenditures that is spent on teacher salaries. The portion of current expenditures that goes toward teacher salaries has been in a slow downward trend, with the teacher salary share falling from 40.1 percent in 1979–80 to 39.2 percent in 1991–92. With the projected values, the portion of current expenditures that go toward teacher salaries continues to fall slowly, falling to 38.0 percent in 2004–2005.

The results of this exercise indicate that the projections of these three time series are consistent.

Projection Accuracy

This is the seventh consecutive year in which *Projections of Education Statistics* has contained projections of current expenditures and teacher salaries. The actual values of current expenditures and teacher salaries can be compared with the projected values in the previous editions to examine the accuracy of the models.

The projections from the various editions of *Projections of Education Statistics* were placed in 1981–82 dollars using the Consumer Price Indices that appeared in each edition.

The projections for current expenditures presented in *Projections of Education Statistics to 1997–98* were produced by a model slightly different from the model used for the projections presented in this edition: calendar year data, rather than school year data, were used for disposable income, the population, and the Consumer Price Index. The independent variables used in *Projections of Education Statistics to 2000*, *Projections of Education Statistics to 2001: An Update*, *Projections of Education Statistics to 2002*, *Projections of Education Statistics to 2003*, and *Projections of Education Statistics to 2004* were the same as those used in this edition. Beginning with *Projections of Education Statistics to 2004*, however, there was a change in the definition of disposable income. In *Projections of Education Statistics to 2003*, *Projections of Education Statistics to 2004*, and in the present edition, the AR1 model for correcting for autocorrelation was used to estimate the model. In the earlier four editions, ordinary least squares was used to estimate the model.

Mean absolute percentage errors (MAPEs) were calculated for current expenditures and current expenditures per pupil. The MAPEs for projections of current

expenditures were 1.6 percent for the 1-year-ahead projections, 2.4 percent for the 2-years-ahead projections, 2.3 percent for the 3-years-ahead projection, 1.7 percent for the 4-years-ahead projection, and 0.4 percent for the 5-years-ahead projection. The MAPEs for current expenditures per pupil were 1.3 percent (1-year-ahead), 1.6 percent (2-years-ahead), 1.9 percent (3-years-ahead), 0.8 percent (4-years-ahead), and 0.6 percent (5-years-ahead).

For some editions, the first projection to be listed was not actually a 1-year out-projection. For example, in *Projections of Education Statistics to 2002*, the first projection to appear was for 1990–91. This projection was calculated using a sample period ending in 1988–89 and so was considered to be a 2-year-out projection. The value that appeared for 1989–1990 was from NCES *Early Estimates*.

Some of the differences between the actual values and the projected values for current expenditures and current expenditures per pupil are due to the change in the survey form for current expenditures that took place in 1988–89. The results of the crosswalk study suggest that values for current expenditures as presently collected are approximately 1.4 percent higher than they would have been if no change had been made. If the projections for 1988–89, 1989–90, and 1990–91 which appeared in *Projections of Education Statistics to 1997–98*, *Projections of Education Statistics to 2000*, *Projections of Education Statistics to 2001: An Update*, are increased by 1.4 percent, the MAPEs decrease. When this adjustment was made, the MAPEs for current expenditures were 0.9 percent (1-year-ahead), 1.4 percent (2-years-ahead), 1.5 percent (3-years-ahead), 0.3 percent (4-years-ahead), and 1.8 percent (5-years-ahead), and the MAPEs for current expenditures per pupil were 0.6 percent (1-year-ahead), 0.9 percent (2-years-ahead), 1.5 percent (3-years-ahead), 0.9 percent (4-years-ahead), and 2.0 percent (5-years-ahead).

Projections for teacher salaries also appeared in the six most recent editions of *Projections of Education Statistics*.

The projections of teacher salaries presented in the earlier editions were produced using similar sets of independent variables. The same set of independent variables was used to produce the projections in this edition were also used in *Projections of Education Statistics to 2002*, *Projections of Education Statistics to 2003*,and *Projections of Education Statistics to 2004*. In the three earlier editions of *Projections of Education Statistics* in which projections of teacher salaries appear, an additional variable, the change in average daily attendance lagged two periods, was also included. The projections presented in *Projections of Education Statistics to 1997–98* were produced by using calendar year data, rather than school year data, for the population and the Consumer Price Index.

The MAPEs for projections of teacher salaries were 1.2 percent (1-year-ahead), 2.0 percent (2-years-ahead), 2.4 percent (3-years-ahead), 4.0 (4-years-ahead), and 6.8 (5-years-ahead).

Sources of Past and Projected Data

Numbers from several different sources were used to produce these projections. In some instances, the time series used were made by either combining numbers from various sources or manipulating the available numbers. The sources and the methods of manipulation are described here.

The time series used for current expenditures was compiled from several different sources. For the school years ending in even numbers from 1959–60 to 1975–76, the numbers for current expenditures were taken from various issues of *Statistics of State School Systems*, published by NCES. The numbers for the school years ending in odd numbers during the 1960s were taken from various issues of the National Education Association's *Estimates of School Statistics*. For the school years ending in odd numbers during the 1970s, up to and including 1976–77, the numbers were taken from various issues of *Revenues and Expenditures for Public Elementary and Secondary Education*, published by NCES. For the school years from 1977–78 until 1991–92, the numbers were taken from the NCES Common Core of Data survey and unpublished data.

For 1974–75 and 1976–77, expenditures for summer schools were subtracted from the published figures for current expenditures. The value for 1972–73 was the sum of current expenditures at the local level, expenditures for administration by state boards of education and state departments of education, and expenditures for administration by intermediate administrative units.

Note that although the data from the different sources are similar, they are not entirely consistent. Also, the NCES numbers beginning with 1980–81 are not entirely consistent with the earlier NCES numbers, due to differing treatments of items such as expenditures for administration by state governments and expenditures for community services.

An alternative source for current expenditures would have been the Bureau of the Census' F-33 which offers statistics to the district level. This level of detail was not needed however.

For most years, the sources for the past values of average daily attendance were identical to the sources for current expenditures. For 1978–79, the number was taken from *Revenues and Expenditures for Public Elementary and Secondary Education*.

Projections for average daily attendance for the period from 1992–93 to 2004–2005 were made by multiplying the projections for enrollment by the average value of the ratios of average daily attendance to the enrollment from 1982–83 to 1991–92; this average value was approximately 0.93.

The values for fall enrollment from 1959–60 to 1977–78 were taken from issues of the NCES publication *Statistics of Public Elementary and Secondary Schools*. The 1978–79 value was taken from the *NCES Bulletin* of October 23, 1979, "Selected Public and Private Elementary and Secondary Education Statistics." The values from 1979–80 to 1992–93 were taken from the NCES Common Core of Data survey. The number for 1993–94 was taken

from the 1993–94 *Early Estimates*. The projections for fall enrollment are those presented in Chapter 1.

For 1959–60 to 1991–92, the sources for revenue receipts from state sources were the two NCES publications *Statistics of State School Systems* and *Revenues and Expenditures for Public Elementary and Secondary Education* and the NCES Common Core of Data survey. The methods for producing the alternative projections for revenue receipts from state sources are outlined above.

The numbers for average teacher salaries were taken from various issues of the National Education Association's *Estimates of School Statistics*.

The projected values for disposable income, personal taxes and nontax receipts to state and local governments, and indirect business taxes and tax accruals to state and local governments, were developed using DRI/McGraw-Hill's U.S. Quarterly Model. Projected values of the Bureau of Labor Statistic's Consumer Price Index for all urban consumers, which was used for adjusting current expenditures, teacher salaries, revenue receipts from state sources, and the state revenue variables, were also developed using the U.S. Quarterly Model. DRI/McGraw-Hill supplied the historic values for these variables.

Both the historic and projected values for the population were supplied by the U.S. Bureau of the Census.

The values of all the variables from DRI were placed in school-year terms. The school-year numbers were calculated by taking the average of the last two quarters of 1 year and the first two quarters of the next year.

The Elementary and Secondary School Price Index was considered as a replacement for the Consumer Price Index for placing current expenditures and teacher salaries in constant dollars. As projections of the price index are required for placing the forecasts into current dollars, and as there are no projections of the Elementary and Secondary School Price Index, the Consumer Price Index was used.

Table A5.1.—Equations for current expenditures per pupil in average daily attendance, average annual salaries of teachers, and education revenue receipts from state sources

Dependent variable	Equation	$\bar{R}^2$	Durbin-Watson statistic	Estimation technique*	Rho
Current expenditures per pupil	ln(CUREXP) = - 1.620 + 0.597ln(PCI) + 0.614ln(SGRANT) (-1.14) (2.34) (4.45) - 0.345ln(ADAPOP) (-2.56)	0.997	1.892	AR1	0.412 (2.31)
Average annual salaries	SALARY = - 6743.6 + 4.18CUREXP + 96579ADAPOP (-2.84) (15.92) (9.53) + 0.00058DIFADA1 (3.65)	0.984	1.548	AR1	0.708 (4.82)
Education revenue receipts from state sources per capita	SGRANT = - 85.8 + 0.22PERTAX1 + 0.35BUSTAX1 (-4.23) (1.87) (4.06) + 438ADAPOP - 8.7INCR (3.12) (-3.17)	0.992	1.988	OLS	

*OLS = Ordinary Least Squares. Ak1 is an estimation procedure for correcting the problem of first-order autocorrelation.

NOTES: The sample size for revenue receipts from state sources is 32. The sample size for current expenditures and teacher salaries is 33. Numbers in parentheses are t-statistics. $\bar{R}^2$ = Coefficient of determination, adjusted for degrees of freedom. For an explanation of the Durbin-Watson statistic, see J. Johnston, *Econometric Methods*, New York: McGraw-Hill, 1972, pages 251–252. Rho is the first order autocorrelation coefficient estimated when AR1 is used. (This table was prepared September 1994.)

A6. Expenditures of Institutions of Higher Education

A total of eight higher education expenditure models was estimated: one current-fund expenditure model and one educational and general expenditure model for each of the four types of higher education institutions—public 4-year; public 2-year; private 4-year; and private 2-year. For all the sectors, except private 2-year, econometric techniques were used. Due to the lack of a consistent database for private 2-year schools, exponential smoothing, which requires fewer observations, was used.

The higher education econometric models were selected on the basis of their statistical properties, such as the coefficients of determination (R^2), the t-statistics of the variables, the Durbin-Watson statistic, and residual plots. These econometric models will yield good forecasting results only if the relationships that existed among the variables in the past continue throughout the projection period.

Higher Education Institutions Expenditure Models

Similar econometric models were developed for three types of institutions. While there has been significantly less work by economists studying the factors influencing higher education finance data than those influencing elementary and secondary finance data, there have been some valuable studies. This body of work was used in building these models.

In Chapter 7, some of the factors that are historically associated with the level of expenditures were discussed. These were: (1) the state of the economy; (2) the inflation rate; and (3) enrollments. Each of the models presented here contains variables measuring at least two of these three factors. Either disposable income per capita or revenues of state and local governments per capita was used to measure the state of the economy. Two measures of the inflation rate were considered: the rate of change in the inflation rate; or a dummy for years with inflation rates greater than 8 percent. In each equation, an enrollment variable was included.

For each dependent variable, a number of alternative specifications were examined. In each case, the choice of the final specification was made after considering such factors as the coefficients of determination, the t-statistics of the variables, residual plots, and ex-post mean absolute percent errors. The final specification of each model has the dependent variables and some of the independent variables as first differences. Linear and log-linear specifications were also examined.

The Public 4-Year Institutions Expenditure Models

The public 4-year institutions current-fund expenditure model is:

$$\text{DPUTCUR4} = b_0 + b_1\text{DSTREV1} + b_2\text{DPUFTE4} + b_3\text{DUMMY}$$

where:

DPUTCUR4 is the change in current-fund expenditures per student in full-time-equivalent (FTE) enrollment in public 4-year institutions in constant 1982–84 dollars;

DSTREV1 is the change in the sum of personal tax and nontax receipts to state and local governments and indirect business taxes and tax accruals, excluding property taxes, to state and local governments, per capita, in constant 1982–84 dollars lagged one year;

DPUFTE4 is the change in FTE enrollment in public 4-year institutions; and

DUMMY is a dummy variable equaling 1 when the inflation rate is greater than 8 percent and 0 otherwise.

This model and the other econometric models were estimated using a sample period from 1968–69 to 1991–92. Ordinary least squares was used to estimate all the public institution models.

The results for this model are on table A6.1. Each variable affects current-fund expenditures in a logical fashion. The more revenues that state and local governments receive, the more expenditures they can make for public institutions of higher education. In a year with high inflation (DUMMY equals 1), current-fund expenditures in constant dollars are lower than they would have been otherwise. The more students in public 4-year institutions, the less money to be spent per student.

Three projections were produced: the middle alternative set of projections, the low alternative set of projections, and the high alternative set of projections. Each set of projections was based on a different set of assumptions for the revenues of state and local governments per capita. The projections for revenues of state and local governments per capita and the other economic variables used to produced the higher education expenditure projections were produced using the U.S. Quarterly Model of DRI/McGraw–Hill's (DRI). The development of these alternative sets of projections is discussed in Appendix A5.

In the middle set of alternative projections, the revenues of state and local governments per capita increase at rates

between 0.8 percent and 3.2 percent. In the low set of alternative projections, the revenues of state and local governments per capita increase at rates between 0.9 percent and 3.0 percent. In the high set of alternative projections, the revenues of state and local governments per capita increase at rates between 1.0 percent and 5.4 percent.

Projections for total current-fund expenditures were made by multiplying the projections for current-fund expenditures per student in FTE enrollment by projections for FTE enrollment. Projections were developed in 1982–84 dollars and then placed in 1992–93 dollars using projections for the Consumer Price Index. Current dollar projections were produced by multiplying the constant dollar projections by projections for the Consumer Price Index. All the higher education total expenditure projections, all expenditure projections in 1992–93 dollars, and all the current dollar projections were calculated in similar fashion.

A model for educational and general expenditures of public 4-year institutions was developed using the same variables as the current-fund expenditure model. The model is:

$$DPUED4 = b_0 + b_1 DSTREV1 + b_2 DPUFTE4 + b_3 DUMMY$$

where:

DPUED4 is the change in educational and general expenditures per student in FTE enrollment in public 4-year institutions in constant 1982–84 dollars.

As with current-fund expenditures, each variable affects expenditures in the expected way.

The Public 2-Year Institutions Expenditure Models

The public 2-year institutions current-fund expenditure model has a form similar to the public 4-year institutions current-fund expenditure model except that the public 2-year institutions model does not contain any inflation variables. The model is:

$$DPUTCUR2 = b_0 + b_1 DSTREV1 + b_2 DPUFTE2$$

where:

DPUTCUR2 is the change in current-fund expenditures per student in FTE enrollment in public 2-year institutions in constant 1982–84 dollars; and

DPUFTE2 is the change in FTE enrollment in public 2-year institutions.

The results for this model are on table A6.1. Again, the DSTREV1 has the expected positive effect on expenditures and the FTE enrollment variable has the expected negative impact.

The public 2-year institutions educational and general expenditure model is virtually identical to its current-fund expenditures counterpart. It is:

$$DPUED2 = b_0 + b_1 DSTREV1 + b_2 DPUFTE2$$

where:

DPUED2 is the change in educational and general expenditures per student in FTE enrollment in public 2-year institutions in constant 1982–84 dollars.

The Private 4-Year Institutions Expenditure Models

The private 4-year institutions current-fund expenditure model is:

$$DPRTCUR4 = b_0 + b_1 DPCI + b_2 DPRFTE4 + b_3 ININCR$$

where:

DPRTCUR4 is the change in current-fund expenditures per student in FTE enrollment in private 4-year institutions in constant 1982–84 dollars;

DPCI is the change in disposable income per capita in 1987 dollars;

DPRFTE4 is the change in FTE enrollment in private 4-year institutions to the population; and

ININCR is the rate of change in the inflation rate measured by the Consumer Price Index.

The model was estimated using a method for correcting for autocorrelation—the maximum likelihood search procedure of the program Regression Analysis of Time Series (RATS).

The three alternative sets of projections for current-fund expenditures were produced using varying assumptions about the growth paths for disposable income and the rate of change in the inflation rate measured by the Consumer Price Index. These disposable income and inflation rate projections were also developed using the U.S. Quarterly Model of DRI/McGraw-Hill.

In the middle set of projections, disposable income per capita rises each year from 1994–95 to 2004–2005 at rates between 0.6 percent and 1.7 percent. In the low set of projections, disposable income per capita increases at rates between -0.4 percent and 1.4 percent. In the high set of projections, disposable income per capita increases at rates between 0.7 percent and 4.0 percent.

In the middle set of projections, the inflation rate varies between 3.2 percent and 4.1 percent. In low set of projections, it varies between 4.0 percent and 5.4 percent, and in the high set of projections, it varies between 2.8 percent and 3.7 percent for the high alternative.

The private 4-year institutions educational and general expenditure model is:

$$DPRIED4 = b_0 + b_1DPCI + b_2DPRFTE4 + b_3ININCR$$

where:

DPRIED4 is the change in educational and general expenditures per student in FTE enrollment in private 4-year institutions in constant 1982–84 dollars.

The Private 2-Year Institutions Expenditure Models

Unlike the other higher education variables, econometric methods were not used for either private 2-year current-fund expenditures or private 2-year educational and general expenditures. This was due to a change in the sample universe for private 2-year institutions. The period for which the private 2-year universe is relatively consistent, from 1982–83 to 1991–92, has only ten observations. This is too short a period for econometric techniques, so another means of projecting private 2-year institution expenditures was required. Hence, exponential smoothing, which can operate with only ten observations, was used.

Both current-fund expenditures per student and educational and general expenditures per student were modeled using single exponential smoothing. To do this, the forecasting package Forecast Pro was used. For current-fund expenditures per student, a smoothing constant of 0.88 was used and for educational and general expenditures per student a smoothing constant of 1.00 was used.

Projection Accuracy

This is the fourth time in the past ten years that *Projections of Education Statistics* has contained projections of higher education expenditure data. The other three editions were the *Projections of Education Statistics to 2004*, *Projections of Education Statistics to 2003* and *Projections of Education Statistics to 2000*. The projected values for 1991–92 that appeared in *Projections of Education Statistics to 2004*, the projected values for 1990–91 and 1991–92 that appeared in *Projections of Education Statistics to 2004*, and the projected values for 1986–87 through 1990–91 which appeared in *Projections of Education Statistics to 2000* can be compared to the actual values. The projections that appeared in the two most recent editions *Projections of Education Statistics* were developed using the same methodology as those presented here. Those that appeared in *Projections of Education Statistics to 2000* were produced using different models.

The one-year-out projections for 1990–91 that appeared in *Projections of Education Statistics to 2003* were within one percent of the actual values. For total current-fund expenditures, the projected value was 0.1 percent higher than the actual value. For public 4-year institutions, the projection for current-fund expenditures was 0.6 percent higher than the actual value. For public 2-year institutions, the projection was 0.8 percent lower than the actual value. For private 4-year institutions, the projection was 0.5 percent lower than the actual value.

The one-year-out projections for 1991–92 that appeared in *Projections of Education Statistics to 2004* were within two percent of the actual values. For total current-fund expenditures, the projected value was 0.4 percent lower than the actual value. For public 4-year institutions, the projection for current-fund expenditures was 0.4 percent lower than the actual value. For public 2-year institutions, the projection was 1.5 percent lower than the actual value. For private 4-year institutions, the projection was 0.3 percent lower than the actual value.

The two-year-out projections for 1990–91 that appeared in *Projections of Education Statistics to 2003* were not as close to the actual values as either set of one-year-out projections. For total current-fund expenditures, the projected value was 0.5 percent lower than the actual value. For public 4-year institutions, the projection for current-fund expenditures was 1.0 percent higher than the actual value. For public 2-year institutions, the projection was 5.0 percent lower than the actual value. For private 4-year institutions, the projection was 1.4 percent lower than the actual value.

The projections that appeared in *Projections of Education Statistics to 2000* were not as close to the actual values as those that appeared in the more recent editions. Those projections were developed using models then the projections presented in this edition.

For all institutions in total, the projection for current-fund expenditures that appeared in *Projections of Education Statistics to 2000* was 3.5 percent lower than the actual value for 1986–87, 3.4 percent lower than the actual value for 1987–88, 2.4 percent lower than the actual value for 1988–89, 5.5 percent lower than the actual value for 1989–90, 6.5 percent lower than the actual value for 1990–91 and 6.8 percent lower than the actual value for 1991–92.

For public 4-year institutions, the projection for current-fund expenditures was 3.6 percent lower than the actual value for 1986–87, 2.1 percent lower than the actual value for 1987–88, 1.0 percent lower than the actual value for 1988–89, 4.3 percent lower than the actual value for 1989–90, 5.2 percent lower than the actual value for 1990–91, and 5.3 percent lower than the actual value for 1991–92.

For public 2-year institutions, the projection for current-fund expenditures was 2.1 percent higher than the actual value for 1986–87, 5.3 percent higher than the actual value for 1987–88, 4.4 percent higher than the actual value for 1988–89, 0.9 percent higher than the actual value for 1989–90, and 0.4 percent lower than the actual value for 1990–91, and 0.5 percent lower than the actual value for 1991–92.

For private 4-year institutions, the projection for current-fund expenditures was 5.0 percent lower than the actual value for 1986–87, 7.6 percent lower than the actual value

for 1987–88, 6.5 percent lower than the actual value for 1988–89, 9.3 percent lower than the actual value for 1989–90, and 10.3 percent lower than the actual value for 1990–91, and 11.0 percent lower than the actual value for 1991–92.

Sources of Data

The current-fund expenditure data and the educational and general expenditure data are from the "Financial Statistics of Institutions of Higher Education" and the Integrated Postsecondary Education Data System (IPEDS), "Finance" surveys of the National Center for Education Statistics (NCES). One manipulation of the educational and general expenditures numbers was required. From 1968–69 to 1973–74, student-aid expenditures were a separate component of current-fund expenditures. From 1974–75 on, scholarships and fellowships have been a component of educational and general expenditures. Hence, for the period 1968–69 to 1973–74, student aid was added to the published numbers for educational and general expenditures.

The full-time-equivalent (FTE) enrollment data are from the "Fall Enrollment in Colleges and Universities" surveys of NCES. The FTE enrollment figures for 1968–69, 1969–70, and 1970–71 were estimated using part-time and full-time enrollment data. Full-time-equivalent enrollment was derived by adding one-third of the part-time students to the number of full-time students.

The projected values for disposable income and the revenues of state and local governments per capita were developed using DRI/McGraw-Hill's U.S. Quarterly Model. Projected values of the Bureau of Labor Statistic's Consumer Price Index for all urban consumers, which were used for adjusting the higher education finance data, and the implicit price deflator for personal consumption expenditures, which was used for adjusting disposable income per capita, were also developed using the U.S. Quarterly Model. DRI/McGraw-Hill supplied the historic values for these variables.

Both the historic and projected values for the population were supplied by the U.S. Bureau of the Census.

The Higher Education Price Index was considered as a replacement for the Consumer Price Index for placing the higher education expenditures in constant dollars. As projections of the price index are required for placing the forecasts into current dollars, and as there are no projections of the Higher Education Price Index, the Consumer Price Index was used.

The values of all of the variables from DRI were placed in academic-year terms. The data were available in quarterly format so the academic-year numbers were calculated by taking the average of the last 2 quarters of 1 year with the first 2 of the next year.The projections developed using the U.S. Quarterly model only went to the year 2003–2004. Projections for 2004–2005 were developed by applying the growth rate from 2002–2003 to 2003–2004 to the values for 2003–2004.

Table A6.1.—Equations for current-fund expenditures per student in full-time-equivalent enrollment and educational and general expenditures per student in full-time-equivalent enrollment in public 4-year institutions, public 2-year institutions, and private 4-year institutions

Dependent variable	Equation	$\bar{R}^2$	Durbin-Watson statistic	Estimation technique*	Rho
Current-fund expenditures per student in public 4-year institutions	DPUTCUR4 = 305 + 2.07DSTREV1 − 0.002DPUFTE4 (4.93) (1.93) (−5.29) − 244DUMMY (−3.28)	0.672	1.83	OLS	
Current-fund expenditures per student in public 2-year institutions	DPUTCUR2 = 20.0 + 3.32DSTREV1 − 0.001DPUFTE2 (0.53) (4.12) (−3.63)	0.689	2.26	OLS	
Current-fund expenditures per student in private 4-year institutions	DPRTCUR4 = 506 + 0.38DPCI − 0.009DPRFTE4 (3.60) (1.89) (−6.11) − 475.2ININCR (−5.46)	0.771	2.01	AR1	0.75 (4.9)
Educational and general expenditures per student in public 4-year institutions	DPUED4 = 259 + 1.82DSTREV1 − 0.002DPUFTE4 (4.21) (1.71) (−5.68) − 237DUMMY (−3.21)	0.682	1.71	OLS	
Educational and general expenditures per student in public 2-year institutions	DPUED2 = 9.09 + 3.47DSTREV1 − 0.0006DPUFTE2 (0.23) (4.04) (−2.72)	0.627	2.20	OLS	
Educational and general expenditures per student in private 4-year institutions	DPRIED4 = 179.5 + 0.48DPCI − 0.004DPRFTE4 (1.30) (1.61) (−1.96) − 420.4ININCR (−3.2)	0.472	2.31	AR1	0.58 (2.99)

*OLS = Ordinary Least Squares. AR1 is an estimation procedure for correcting the problem of first-order autocorrelation. For a general discussion of the problem of autocorrelation, and the methods to correct it, see Johnston (1972), chapter 8. For a discussion of the method used to forecast in the presence of autocorrelation, see G. Judge, W. Hill, R. Griffiths, H. Lutkepohl, and T. Lee, *The Theory and Practice of Econometrics*, New York: John Wiley and Sons, 1985, pages 315–318.

NOTES: The sample size in for each case is 24. Numbers in parentheses are t-statistics. $\bar{R}^2$ = Coefficient of determination, adjusted for degrees of freedom. For an explanation of the Durbin-Watson statistic, see J. Johnston, *Econometric Methods*, New York: McGraw-Hill, 1972, pages 251–252. Rho is the first order autocorrelation coefficient estimated when AR1 is used. (This table was prepared September 1994.)

Appendix B

Supplementary Tables

Table B1.—Annual number of births (U.S. Census Projections, Middle Series): 50 States and D.C., 1946 to 2005

(In thousands)

Calendar Year	Number of Births
1946	3,426
1947	3,834
1948	3,655
1949	3,667
1950	3,645
1951	3,845
1952	3,933
1953	3,989
1954	4,102
1955	4,128
1956	4,244
1957	4,332
1958	4,279
1959	4,313
1960	4,307
1961	4,317
1962	4,213
1963	4,142
1964	4,070
1965	3,801
1966	3,642
1967	3,555
1968	3,535
1969	3,626
1970	3,739
1971	3,556
1972	3,258
1973	3,137
1974	3,160
1975	3,144
1976	3,168
1977	3,327
1978	3,333
1979	3,494
1980	3,612
1981	3,629
1982	3,681
1983	3,639
1984	3,669
1985	3,761
1986	3,757
1987	3,809

Table B1.—Annual number of births (U.S. Census Projections, Middle Series):—Continued 50 States and D.C., 1946 to 2005

(In thousands)

Calendar Year	Number of Births
1988	3,910
1989	4,041
1990	4,179
1991	4,094
1992	4,038
1993 *	4,086
	Projected
1994	4,055
1995	4,024
1996	3,995
1997	3,971
1998	3,953
1999	3,941
2000	3,934
2001	3,933
2002	3,937
2003	3,948
2004	3,965
2005	3,990

* Projected.

SOURCE: U.S. Department of Commerce, Bureau of the Census, "U.S. Population Estimates, by Age, Sex, Race, and Hispanic Origin: 1980 to 1991," *Current Population Reports*, Series P-25, No. 1095, February 1993; "Population Projections of the United States, by Age, Sex, Race, and Hispanic Origin: 1993 to 2050," *Current Population Reports*, Series P-25, No. 1104, October 1993; and unpublished tabulations. (This table was prepared September 1994.)

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Table B2.—Preprimary school-age populations (U.S. Census projections, Middle Series): 50 States and D.C., 1980 to 2005

(In thousands)

Year (July 1)	3 years old	4 years old	5 years old	3-5 years old
1980	3,238	3,128	3,180	9,546
1981	3,261	3,274	3,129	9,664
1982	3,361	3,297	3,274	9,932
1983	3,479	3,398	3,296	10,173
1984	3,527	3,518	3,397	10,442
1985	3,566	3,568	3,518	10,652
1986	3,578	3,609	3,568	10,755
1987	3,509	3,623	3,610	10,742
1988	3,620	3,556	3,627	10,803
1989	3,646	3,669	3,559	11,036
1990	3,658	3,697	3,678	11,033
1991	3,716	3,715	3,701	11,132
1992	3,810	3,777	3,721	11,308
1993 *	3,894	3,829	3,781	11,504
		Projected		
1994	4,084	3,958	3,836	11,878
1995	4,114	4,150	3,963	12,227
1996	4,007	4,181	4,156	12,344
1997	3,976	4,070	4,185	12,231
1998	3,946	4,040	4,075	12,061
1999	3,917	4,010	4,046	11,974
2000	3,891	3,980	4,016	11,887
2001	3,871	3,954	3,986	11,811
2002	3,856	3,934	3,961	11,751
2003	3,848	3,920	3,941	11,709
2004	3,844	3,912	3,927	11,683
2005	3,845	3,907	3,918	11,670

* Projected.

SOURCE: U.S. Department of Commerce, Bureau of the Census, "U.S. Population Estimates, by Age, Sex, Race, and Hispanic Origin: 1980 to 1991," *Current Population Reports*, Series P-25, No. 1095, February 1993; "Population Projections of the United States, by Age, Sex, Race, and Hispanic Origin: 1993 to 2050," *Current Population Reports*, Series P-25, No. 1104, October 1993; and unpublished tabulations. (This table was prepared September 1994.)

Table B3.—School-age populations (U.S. Census projections, Middle Series), ages 5, 6, 5–13, and 14–17 years: 50 States and D.C., 1980 to 2005

(In thousands)

Year (July 1)	5 years old	6 years old	5–13 years old	14–17 years old
1980	3,180	3,111	31,091	16,144
1981	3,129	3,186	30,711	15,610
1982	3,274	3,133	30,528	15,057
1983	3,296	3,276	30,279	14,741
1984	3,397	3,297	30,061	14,726
1985	3,518	3,398	29,892	14,888
1986	3,568	3,518	30,078	14,824
1987	3,610	3,568	30,503	14,502
1988	3,627	3,611	31,029	14,023
1989	3,559	3,625	31,413	13,536
1990	3,678	3,561	31,996	13,313
1991	3,701	3,680	32,494	13,424
1992	3,721	3,704	33,006	13,661
1993 *	3,781	3,747	33,424	13,802
		Projected		
1994	3,836	3,785	33,870	14,088
1995	3,963	3,838	34,263	14,591
1996	4,156	3,966	34,868	14,933
1997	4,185	4,156	35,387	15,333
1998	4,075	4,186	35,808	15,600
1999	4,046	4,077	36,253	15,639
2000	4,016	4,047	36,547	15,811
2001	3,986	4,017	36,805	15,903
2002	3,961	3,987	36,991	16,034
2003	3,941	3,962	37,107	16,277
2004	3,927	3,943	37,080	16,522
2005	3,918	3,928	36,843	16,947

* Projected.

SOURCE: U.S. Department of Commerce, Bureau of the Census, "U.S. Population Estimates, by Age, Sex, Race, and Hispanic Origin: 1980 to 1991," *Current Population Reports*, Series P-25, No. 1095, February 1993; "Population Projections of the United States, by Age, Sex, Race, and Hispanic Origin: 1993 to 2050," *Current Population Reports*, Series P-25, No. 1104, October 1993; and unpublished tabulations. (This table was prepared September 1994.)

Table B4.—College-age populations (U.S. Census projections, Middle Series), ages 18, 18–24, 25–29, 30–34, and 35–44 years: 50 States and D.C., 1980 to 2005

(In thousands)

Year (July 1)	18 years old	18–24 years old	25–29 years old	30–34 years old	35–44 years old
1980	4,245	30,360	19,792	17,810	25,868
1981	4,186	30,505	20,275	18,798	26,454
1982	4,136	30,433	20,816	18,781	28,095
1983	3,978	30,174	21,259	19,137	29,336
1984	3,774	29,706	21,584	19,576	30,575
1985	3,686	29,151	21,804	20,102	31,767
1986	3,621	28,467	22,018	20,552	33,081
1987	3,703	27,928	21,982	21,058	34,299
1988	3,803	27,585	21,868	21,470	35,258
1989	3,889	27,379	21,690	21,758	36,494
1990	3,601	27,028	21,358	21,993	37,851
1991	3,384	26,544	20,853	22,251	39,371
1992	3,312	26,076	20,268	22,335	39,976
1993 *	3,349	26,278	20,402	22,579	40,440
			Projected		
1994	3,422	25,990	19,830	22,552	41,333
1995	3,385	25,609	19,382	22,446	42,219
1996	3,540	25,261	19,216	22,119	43,087
1997	3,574	24,950	19,262	21,604	43,879
1998	3,703	25,029	19,138	20,981	44,499
1999	3,883	25,524	18,852	20,399	44,946
2000	3,873	26,055	18,459	19,937	45,192
2001	3,971	26,607	18,012	19,761	45,164
2002	3,964	27,186	17,524	19,805	44,891
2003	3,918	27,563	17,431	19,684	44,336
2004	4,044	28,026	17,594	19,405	43,714
2005	4,060	28,383	17,936	19,015	43,144

* Projected.

SOURCE: U.S. Department of Commerce, Bureau of the Census, "U.S. Population Estimates, by Age, Sex, Race, and Hispanic Origin: 1980 to 1991," *Current Population Reports*, Series P-25, No. 1095, February 1993; "Population Projections of the United States, by Age, Sex, Race, and Hispanic Origin: 1993 to 2050," *Current Population Reports*, Series P-25, No. 1104, October 1993; and unpublished tabulations. (This table was prepared September 1994.)

Table B5.—Average daily attendance (ADA) in public elementary and secondary schools, change in ADA, the population, and ADA as a proportion of the population: 50 States and D.C., 1979–80 to 2004–2005

Year ending	ADA [1] (in thousands)	Change in ADA	Population (in millions)	ADA as a proportion of the the population
1980	38,289	–787,089	225.1	0.170
1981	37,704	–585,167	227.7	0.166
1982	37,095	–609,092	230.0	0.161
1983	36,636	–458,784	232.2	0.158
1984	36,363	–272,890	234.3	0.155
1985	36,404	41,283	236.3	0.154
1986	36,523	118,842	238.5	0.153
1987	36,864	340,764	240.7	0.153
1988	37,051	186,840	242.8	0.153
1989	37,268	217,365	245.0	0.152
1990	37,799	531,224	247.3	0.153
1991	38,427	627,247	249.9	0.154
1992	38,961	534,240	252.6	0.154
1993 [2]	39,663	702,486	255.5	0.155
1994 [3]	40,322	658,599	258.2	0.156
		Projected		
1995	41,049	727,160	261.1	0.157
1996	41,791	741,914	263.8	0.158
1997	42,648	856,658	266.5	0.160
1998	43,425	777,013	269.1	0.161
1999	43,986	561,813	271.6	0.162
2000	44,458	471,079	274.2	0.162
2001	44,841	383,172	276.6	0.162
2002	45,175	333,932	279.1	0.162
2003	45,462	287,622	281.5	0.162
2004	45,677	215,074	283.9	0.161
2005	45,905	227,776	286.3	0.160

[1] Projections of average daily attendance were made by multiplying the forecasts for enrollment reported earlier in this publication by the average value of the ratio average daily attendance to the enrollment from 1983 to 1992, approximately 0.93 percent.

[2] Average daily attendance is projected.

[3] Projected.

SOURCE: U.S. Department of Commerce, Bureau of the Census, "U.S. Population Estimates, by Age, Sex, Race, and Hispanic Origin: 1980 to 1991," Series P-25, No. 1095, February 1994 and unpublished tabulations; U.S. Department of Education, National Center for Education Statistics, *Statistics of State School Systems*; Common Core of Data survey; and the Early Estimates survey; DRI/McGraw-Hill, "U.S. Quarterly Model." (This table was prepared September 1994.)

Table B6.—Disposable income per capita (in constant 1992–93 dollars),[1] with alternative projections: 50 states and D.C., 1979–80 to 2004–2005

Year ending	Disposable income per capita		
1980	$15,184	—	—
1981	15,256	—	—
1982	15,357	—	—
1983	15,385	—	—
1984	16,038	—	—
1985	16,659	—	—
1986	16,919	—	—
1987	17,068	—	—
1988	17,320	—	—
1989	17,658	—	—
1990	17,770	—	—
1991	17,712	—	—
1992	17,724	—	—
1993	18,051	—	—
1994[2]	18,333	—	—
	Middle alternative projections	**Low alternative projections**	**High alternative projections**
1995	18,636	$18,256	$19,059
1996	18,771	18,278	19,331
1997	19,067	18,539	19,654
1998	19,367	18,785	20,002
1999	19,650	19,004	20,340
2000	19,857	19,134	20,624
2001	19,995	19,224	20,810
2002	20,108	19,308	20,956
2003	20,244	19,421	21,120
2004	20,412	19,551	21,337
2005	20,582	19,683	21,556

[1] Based on the price deflator for personal consumption expenditures, Bureau of Labor Statistics, U.S. Department of Labor.

[2] Projected.

SOURCE: DRI/McGraw-Hill, "U.S. Quarterly Model." (This table was prepared September 1994.)

Table B7.—Education revenue receipts from state source per capita (in constant 1992–93 dollars),[1] with alternative projections: 50 states and D.C. 1979–80 to 2004–2005

Year ending	Education revenue receipts from state sources per capita		
1980	$370	—	—
1981	363	—	—
1982	345	—	—
1983	352	—	—
1984	360	—	—
1985	383	—	—
1986	404	—	—
1987	420	—	—
1988	425	—	—
1989	440	—	—
1990	446	—	—
1991	448	—	—
1992	444	—	—
1993[2]	443	—	—
1994[2]	449	—	—
	Middle alternative projections	**Low alternative projections**	**High alternative projections**
1995	456	$452	$458
1996	466	455	478
1997	475	459	493
1998	484	463	503
1999	494	472	514
2000	503	479	525
2001	510	485	534
2002	514	489	540
2003	518	492	545
2004	523	497	551
2005	528	502	557

[1] Based on the Consumer Price Index for all urban consumers, Bureau of Labor Statistics, U.S. Department of Labor.

[2] Projected.

SOURCE: U.S. Department of Education, National Center for Education Statistics, *Statistics of State School Systems*; Common Core of Data survey; and Early Estimates survey; and National Education Association, annual *Estimates of State School Statistics*. (Latest edition 1993–94. Copyright 1994 by the National Education Association. All rights reserved.) (This table was prepared September 1994.)

Table B8.—Consumer Price Index (base year 1992–93), with alternative projections: 50 States and D.C., 1979–80 to 2004–2005

Year ending	Consumer Price Index		
1980	0.544	—	—
1981	0.608	—	—
1982	0.660	—	—
1983	0.689	—	—
1984	0.714	—	—
1985	0.742	—	—
1986	0.764	—	—
1987	0.781	—	—
1988	0.813	—	—
1989	0.850	—	—
1990	0.891	—	—
1991	0.940	—	—
1992	0.970	—	—
1993	1.000	—	—
1994*	1.027	—	—
	Middle alternative projections	**Low alternative projections**	**High alternative projections**
1995	1.060	1.068	1.056
1996	1.096	1.121	1.087
1997	1.134	1.179	1.117
1998	1.174	1.241	1.150
1999	1.217	1.307	1.185
2000	1.263	1.376	1.224
2001	1.311	1.448	1.265
2002	1.362	1.526	1.308
2003	1.416	1.608	1.356
2004	1.475	1.695	1.406
2005	1.535	1.786	1.458

*Projected.

SOURCE: DRI/McGraw-Hill "U.S. Quarterly Model." (This table was prepared September 1994.)

Table B9.—Rate of change for the inflation rate based on the Consumer Price Index, with alternative projections: 50 States and D.C., 1979–80 to 2004–2005

Year ending	Rate of change for the inflation rate		
1980	0.414	—	—
1981	–0.126	—	—
1982	–0.252	—	—
1983	–0.508	—	—
1984	–0.134	—	—
1985	0.059	—	—
1986	–0.259	—	—
1987	–0.231	—	—
1988	0.859	—	—
1989	0.100	—	—
1990	0.045	—	—
1991	0.152	—	—
1992	–0.420	—	—
1993	–0.025	—	—
1994 *	–0.137	—	—
	Middle alternative projections	**Low alternative projections**	**High alternative projections**
1995	0.190	0.463	0.077
1996	0.073	0.242	0.007
1997	0.004	0.048	–0.034
1998	0.048	0.011	0.052
1999	0.015	0.015	0.055
2000	0.024	–0.005	0.056
2001	0.005	–0.002	0.021
2002	0.038	0.014	0.030
2003	0.028	0.007	0.053
2004	0.023	0.001	0.026
2005	0.000	0.000	0.000

* Projected.

SOURCE: DRI/McGraw–Hill "U.S. Quarterly Model." (This table was prepared September 1994.)

Table B10.—Personal tax and nontax payments to state and local governments, per capita (in constant 1992–93 dollars),[1] with alternative projections: 50 States and D.C. 1979–80 to 2004–2005

Year ending	Personal tax and nontax payments per capita		
1980	$436	—	—
1981	431	—	—
1982	433	—	—
1983	448	—	—
1984	493	—	—
1985	517	—	—
1986	533	—	—
1987	576	—	—
1988	574	—	—
1989	597	—	—
1990	615	—	—
1991	605	—	—
1992	611	—	—
1993	614	—	—
1994[2]	626	—	—
	Middle alternative projections	**Low alternative projections**	**High alternative projections**
1995	650	$640	$664
1996	666	642	697
1997	692	667	724
1998	714	687	751
1999	734	706	776
2000	751	723	796
2001	764	738	811
2002	777	752	827
2003	791	766	843
2004	805	780	861
2005	819	794	879

[1] Based on the Consumer Price Index for all urban consumers, Bureau of Labor Statistics, U.S. Department of Labor.

[2] Projected.

SOURCE: DRI/McGraw-Hill "U.S. Quarterly Model." (This table was prepared September 1994.)

Table B11.—Indirect business taxes and nontax accruals, excluding property taxes, for state and local governments, per capita (in constant 1992–93 dollars),[1] with alternative projections: 50 States and D.C., 1979–80 to 2004–2005

Year ending	Indirect business taxes and nontax accruals per capita		
1980	$806	—	—
1981	792	—	—
1982	777	—	—
1983	793	—	—
1984	862	—	—
1985	902	—	—
1986	945	—	—
1987	959	—	—
1988	971	—	—
1989	972	—	—
1990	980	—	—
1991	962	—	—
1992	967	—	—
1993	978	—	—
1994[2]	999	—	—
	Middle alternative projections	**Low alternative projections**	**High alternative projections**
1995	1,026	$1,006	$1,049
1996	1,052	1,024	1,085
1997	1,078	1,049	1,113
1998	1,090	1,060	1,126
1999	1,102	1,068	1,140
2000	1,111	1,073	1,153
2001	1,117	1,077	1,161
2002	1,120	1,079	1,166
2003	1,126	1,084	1,173
2004	1,135	1,091	1,185
2005	1,144	1,099	1,197

[1] Based on the Consumer Price Index for all urban consumers, Bureau of Labor Statistics, U.S. Department of Labor.

[2] Projected.

SOURCE: DRI/McGraw-Hill, "U.S. Quarterly Model." (This table was prepared September 1994.)

Table B12.—Sum of personal tax and nontax payments and indirect business taxes and tax accruals, excluding property taxes, for state and local governments per capita (constant 1992–93 dollars),[1] with alternative projections: 50 States and D.C., 1979–80 to 2004–2005

Year ending	Tax and nontax payments per capita		
1980	$1,242	—	—
1981	1,224	—	—
1982	1,210	—	—
1983	1,241	—	—
1984	1,355	—	—
1985	1,419	—	—
1986	1,479	—	—
1987	1,535	—	—
1988	1,545	—	—
1989	1,570	—	—
1990	1,595	—	—
1991	1,567	—	—
1992	1,578	—	—
1993	1,592	—	—
1994[2]	1,625	—	—
	Middle alternative projections	**Low alternative projections**	**High alternative projections**
1995	1,677	$1,646	$1,712
1996	1,718	1,666	1,781
1997	1,770	1,716	1,837
1998	1,803	1,747	1,876
1999	1,836	1,774	1,916
2000	1,862	1,796	1,949
2001	1,881	1,815	1,972
2002	1,897	1,830	1,993
2003	1,917	1,850	2,017
2004	1,940	1,871	2,046
2005	1,963	1,893	2,076

[1] Based on the Consumer Price Index for all urban consumers, Bureau of Labor Statistics, U.S. Department of Labor.

[2] Projected.

SOURCE: DRI/McGraw–Hill "U.S. Quarterly Model." (This table was prepared September 1994.)

Appendix C

Data Sources

Sources and Comparability of Data

The information in this report was obtained from many sources, including Federal and state agencies, private research organizations, and professional associations. The data were collected by many methods, including surveys of a universe (such as all colleges) or of a sample, and compilations of administrative records. Care should be used when comparing data from different sources. Differences in procedures, such as timing, phrasing of questions, and interviewer training mean that the results from the different sources are not strictly comparable. More extensive documentation of one survey's procedures than of another's does not imply more problems with the data, only that more information is available.

Accuracy of Data

The accuracy of any statistic is determined by the joint effects of "sampling" and "nonsampling" errors. Estimates based on a sample will differ from the figures that would have been obtained if a complete census had been taken using the same survey instruments, instructions, and procedures. Besides sampling errors, both surveys, universe and sample, are subject to errors of design, reporting, processing, and errors due to nonresponse. To the extent possible, these nonsampling errors are kept to a minimum by methods built into the survey procedures. In general, however, the effects of nonsampling errors are more difficult to gauge than those produced by sampling variability.

Sampling Errors

The standard error is the primary measure of sampling variability. It provides a specific range—with a stated confidence—within which a given estimate would lie if a complete census had been conducted. The chances that a complete census would differ from the sample by less than the standard error are about 68 out of 100. The chances that the difference would be less than 1.65 times the standard error are about 90 out of 100. The chances that the difference would be less than 1.96 times the standard error are about 95 out of 100. The chances that it would be less than 2.58 times as large are about 99 out of 100.

The standard error can help assess how valid a comparison between two estimates might be. The standard error of a difference between two sample estimates that are uncorrelated is approximately equal to the square root of the sum of the squared standard errors of the estimates. The standard error (se) of the difference between sample estimate "a" and sample estimate "b" is:

$$se_{a-b} = (se_a^2 + se_b^2)^{1/2}$$

Note that most of the standard errors in subsequent sections and in the original documents are approximations. That is, to derive estimates of standard errors that would be applicable to a wide variety of items and could be prepared at a moderate cost, a number of approximations were required. As a result, most of the standard errors presented provide a general order of magnitude rather than the exact standard error for any specific item.

Nonsampling Errors

Both universe and sample surveys are subject to nonsampling errors. Nonsampling errors are of two kinds—random and nonrandom. Random nonsampling errors may arise when respondents or interviewers interpret questions differently, when respondents must estimate values, or when coders, keyers, and other processors handle answers differently. Nonrandom nonsampling errors result from total nonresponse (no usable data obtained for a sampled unit), partial or item nonresponse (only a portion of a response may be usable), inability or unwillingness on the part of respondents to provide information, difficulty interpreting questions, mistakes in recording or keying data, errors of collection or processing, and overcoverage or undercoverage of the target universe. Random nonresponse errors usually, but not always, result in an understatement of sampling errors and thus an overstatement of the precision of survey estimates. Because estimating the magnitude of nonsampling errors would require special experiments or access to independent data, these magnitudes are seldom available.

To compensate for suspected nonrandom errors, adjustments of the sample estimates are often made. For example, adjustments are frequently made for nonresponse, both total and partial. An adjustment made for either type of nonresponse is often referred to as an imputation, that is, substitution of the "average" questionnaire response

for the nc response. Imputations are usually made separately within various groups of sample members that have similar survey characteristics. Imputation for item nonresponse is usually made by substituting for a missing item the response to that item of a respondent having characteristics that are similar to those of the nonrespondent.

Although the magnitude of nonsampling errors in the data used in this *Projections of Education Statistics* is frequently unknown, idiosyncrasies that have been identified are noted on the appropriate tables.

Federal Agency Sources

National Center for Education Statistics (NCES)

Common Core of Data

NCES uses the Common Core of Data (CCD) survey to acquire and maintain statistical data on the 50 states, the District of Columbia, and the outlying areas from the universe of state-level education agencies. Information about staff and students is collected annually at the school, LEA (local education agency or school district), and state levels. Information about revenues and expenditures is also collected at the state level.

Data are collected for a particular school year (July 1 through June 30) via survey instruments sent to the states by October 15 of the subsequent school year. States have 2 years in which to modify the data originally submitted.

Since the CCD is a universe survey, the CCD information presented in this edition of *Projections of Education Statistics* is not subject to sampling errors. However, nonsampling errors could come from two sources—nonreturn and inaccurate reporting. Almost all of the states submit the six CCD survey instruments each year, but submissions are sometimes incomplete or too late for publication.

Understandably, when 57 education agencies compile and submit data for over 85,000 public schools and approximately 15,000 local school districts, misreporting can occur. Typically, this results from varying interpretation of NCES definitions and differing recordkeeping systems. NCES attempts to minimize these errors by working closely with the Council of Chief State School Officers (CCSSO).

The state education agencies report data to NCES from data collected and edited in their regular reporting cycles. NCES encourages the agencies to incorporate into their own survey systems the NCES items they do not already collect so that those items will also be available for the subsequent CCD survey. Over time, this has meant fewer missing data cells in each state's response, reducing the need to impute data.

NCES subjects data from the education agencies to a comprehensive edit. Where data are determined to be inconsistent, missing, or out of range, NCES contacts the education agencies for verification. NCES-prepared state summary forms are returned to the state education agencies for verification. States are also given an opportunity to revise their state-level aggregates from the previous survey cycle.

Questions concerning the Common Core of Data can be directed to:

John Sietsema
Elementary/Secondary Education Statistics Division
National Center for Education Statistics
555 New Jersey Avenue NW
Washington, DC 20208

Early Estimates System. The early estimates system is designed to allow NCES to report selected key statistics early in the school year. The information is collected through contact with public school state education agencies and a sample of private schools. Details of the two systems follow.

The source of universe statistical information about public elementary and secondary education is the Common Core of Data (CCD)—data collected annually by NCES from state education agencies. These data are reported to NCES in March, undergo NCES and state editing, and become available for publication in September—full year after the beginning of the school year. High school graduate and fiscal data are reported a year later than student and teacher data. In contrast, the estimates included in this report are made in December of the school year to which they apply.

Fifty states, the District of Columbia, and three outlying areas participated in the public school early estimates survey in 1993. The estimates reported here were provided by state education agencies and represent the best information on public elementary and secondary schools available to states at this early stage of the school year. They are, however, subject to revision. The estimates for the remaining eight states and three outlying areas were imputed by NCES.

The source of universe statistical information on private schools in the United States is the Private School Survey. The private school universe consists of a diverse population of schools, including those with a religious orientation (for example, Catholic, Lutheran, and Jewish) as well as nonsectarian schools that include programs ranging from regular to special emphasis and special education. The private school early estimates is one reporting component of the universe collection. The basic statistical information included in this data system is collected from all private schools in the NCES universe, and the early estimates are based on a subsample of that universe.

NCES is continuing to examine and evaluate various methodologies to obtain better estimates and improve the data collection system for public and private elementary and secondary education. In the fall of 1992, the private school early estimates data were collected using Computer Assisted Telephone Interviewing, or CATI. This technique helps reduce errors in the data due to reporting or keying

error, and provides an on-line editing system that enables interviewers to verify inconsistent responses.

Questions concerning the Early Estimates System can be directed to:

Frank Johnson
Elementary/Secondary Education Statistics Division
National Center for Education Statistics
555 New Jersey Avenue NW
Washington, DC 20208

Private School Early Estimates System: 1988–89. The private school early estimates are the first reporting component of the Private School Universe data collection system. In subsequent years, the statistical information will be collected from all private schools in the NCES universe, and the early estimates will be based on a subsample of that universe.

Early in October 1988, questionnaires were mailed to a national probability sample of 1,167 private elementary and secondary schools from a universe of approximately 30,000 private schools. Telephone followup of nonrespondents was initiated in late October, and data collection was completed in late November. The overall response rate was 94 percent: 978 of the 1,035 eligible schools. Some 132 of the original 1,167 schools in the sample were determined to be out of scope. While this survey was not designed specifically to yield an estimate of the number of private schools, the number of out-of-scope schools identified in this survey resulted in a weighted estimate of approximately 26,300 private schools.

The sampling frame used for the survey was composed of two nonoverlapping frames: the NCES list frame of approximately 24,000 eligible schools, and an area frame developed by the Census Bureau for 75 Primary Sampling Units (PSUs). The area frame yielded a sample size of 523 schools for the Schools and Staffing Survey (SASS). The private school early estimates area sample was drawn from the SASS area sample. The sample from the area frame was sorted by level of school, by religious orientation class within school level, then by PSU within religious orientation class, and finally by student membership within PSU.

The sample from the list frame was stratified by level of school (elementary, secondary, combined, and other) and religious orientation (Catholic, other religious, and nonsectarian), and within strata, schools were further sorted by Office of Education regions, and by student membership size within region. Each school in the sorted frame was assigned a sampling measure of size equal to the square root of student membership, and samples were selected with probabilities proportionate to size from each orientation/level stratum.

The survey data were weighted to reflect the sampling rates (probability of selection) and were adjusted for nonresponse. Estimates of standard errors were computed using a variance estimation procedure for complex sample survey data known as jackknife. The standard errors for private school early estimates for school years 1987–88 and 1988–89 are shown in the table below.

Students (1988–89)	Teachers (1988–89)	Graduates (1987–88)
96,779.9	7,624.7	9,605.4

Nonsampling errors may include such things as differences in the respondents' interpretation of the meaning to the questions, differences related to the particular time the survey was conducted, or errors in data preparation. During the design of the survey and survey pretest, an effort was made to check for consistency of interpretation of questions and to eliminate ambiguous items. The questionnaire was pretested with respondents like those who completed the survey, and the questionnaire and instructions were extensively reviewed by NCES and representatives of private school associations attending the NCES private school data users meeting. Manual and machine editing of the questionnaires was conducted to check the data for accuracy and consistency. Extensive telephone followup was conducted for missing or inconsistent items; data were keyed with 100-percent verification.

Undercoverage in the list and area frames is another possible source of nonsampling error. The area frame was used to complement the list frame through the identification of schools missing from the list frame. As the Early Estimates System and the Private School Universe data collection system develop, efforts will be directed toward updating the universe list and identifying and minimizing sources of undercoverage in both the list and area frames.

Questions concerning the Private School Early Estimates System can be directed to:

Marilyn M. McMillen
Elementary/Secondary Education Statistics Division
National Center for Education Statistics
555 New Jersey Avenue NW
Washington, DC 20208

Private School Early Estimates System: 1989–90. This is the second in a series of early estimates for private elementary and secondary education. These early estimates are key statistics reported early in the school year and include the numbers of teachers, students, and high school graduates for private elementary and secondary schools. In subsequent years, the statistical information will be collected from all private schools in the NCES universe, and the early estimates will be based on a subsample of that universe.

Early in October 1989, questionnaires were mailed to a national probability sample of 1,169 private elementary and secondary schools from a universe of approximately 27,000 private schools. Telephone followup of nonrespondents was initiated in late October, and data collection was completed in late November. The overall response rate was 95 percent: 986 of the 1,042 eligible schools. Some 127 of the original 1,167 schools in the sample were determined to be out of scope. While this survey was not designed specifically to yield an estimate

of the number of private schools, the number of out-of-scope schools identified in this survey resulted in a weighted estimate of approximately 26,645 private schools.

The sampling frame used for the survey was composed of two nonoverlapping frames: the NCES list frame of approximately 24,000 eligible schools, and an area frame developed by the Census Bureau for 75 Primary Sampling Units (PSUs). The area frame yielded a sample size of 523 schools for the Schools and Staffing Survey (SASS). The private school early estimates area sample was drawn from the SASS area sample. The sample from the area frame was sorted by level of school, by religious orientation class within school level, then by PSU within religious orientation class, and finally by student membership within PSU.

The sample from the list frame was stratified by level of school (elementary, secondary, combined, and other) and religious orientation (Catholic, other religious, and nonsectarian), and within strata, schools were further sorted by Census regions, and by student membership size within region. Each school in the sorted frame was assigned a sampling measure of size equal to the square root of student membership. The sample design for the list frame was similar, differing in two ways from the design for the area frame. First, stratification by level of school yielded four, rather than three categories: elementary, secondary, combined, and other. Second, the measure of size was simply the square root of student membership.

The survey data were weighted to reflect the sampling rates (probability of selection) and were adjusted for nonresponse. Estimates of standard errors were computed using a variance estimation procedure for complex sample survey data known as balanced repeated replication. The standard errors for private school early estimates for school years 1988–89 and 1989–90 are shown in the table below.

Students (1989–90)	Teachers (1989–90)	Graduates (1988–89)
117,830.9	8,636.1	13,305.6

Nonsampling errors may include such things as differences in the respondents' interpretations of the meaning to the questions, differences related to the particular time the survey was conducted, or errors in data preparation. The survey instrument used in the 1989–90 Early Estimates data collection was developed based on the experiences of the 1988–89 Early Estimates data collection. The form was modified as needed to accommodate one data collection instrument for both the Early Estimates and Universe components of the Private School data collection system. The content of the survey was developed in consultation with representatives of private school associations attending NCES private school data users meetings. The questionnaire and instructions were extensively reviewed by NCES staff. Manual and machine editing of the questionnaires was conducted to check the data for accuracy and consistency. Data were keyed with 100-percent verification.

Undercoverage in the list and area frames is another possible source of nonsampling error. The area frame was used to complement the list frame through the identification of schools missing from the list frame. As the Early Estimates System and the Private School Universe data collection system develop, both the list and area frames will be updated periodically. For the 1989–90 Early Estimates data collection, 1,000 private schools were added to the universe list.

Questions concerning the Private School Early Estimates System can be directed to:

Marilyn M. McMillen
Elementary/Secondary Education Statistics Division
National Center for Education Statistics
555 New Jersey Avenue NW
Washington, DC 20208

Private School Early Estimates System: 1990–91. Early in September 1990, questionnaires were mailed to a national probability sample of 1,167 private elementary and secondary schools. Telephone collection of the data began in early October and was completed in mid-October. The overall response rate was 98 percent: 1,098 of the 1,119 eligible schools. Some 48 of the original 1,167 schools in the sample were determined to be out of scope. After adjusting for out-of-scope schools, the weighted estimate of private schools is 24,553.

The sampling frame used for the survey was composed of two nonoverlapping frames: the NCES Private School Survey list of approximately 20,584 eligible schools (the universe list), and an area frame developed by the Census Bureau, consisting of 923 schools identified in 123 sampled geographic areas (Primary Sampling Units or PSUs). The list frame was stratified by level of school (elementary, secondary, combined, other, and unknown) and religious orientation (Catholic, other religious, and nonsectarian); within strata, schools were further sorted by Census region and by student membership size within region. Each school in the sorted frame was assigned a sampling measure of size equal to the square root of student membership.

The area frame is constructed from a sample survey designed to capture those schools not included in the universe list. The 923 schools identified in the sampled areas are weighted to a national estimate of the number of private schools not included in the universe list. This weighted number is then added to the universe count to produce an estimate of the total number of private schools in the United States. For the early estimate, the area frame was stratified by level of school (elementary, secondary, and other) and religious orientation (Catholic, other religious, and nonsectarian). Within strata, schools were further sorted by FIPS (Federal Information Processing Standards) state code, by FIPS county code within states, and by student membership within counties. Samples were selected with probabilities proportionate to size from each stratum. The measure of size used for this purpose was the square root of student membership multiplied by the inverse of the probability of selection of the PSU in which the school is located.

A new estimation procedure was used to produce the 1990 private school early estimates. This procedure used

the estimates obtained from the entire universe of private schools in the Private School Survey of 1989 and adjusted these estimates for the change reflected in the 1990 early estimates data collections. The steps of this procedure were: (1) obtain Private School Survey (PSS) universe estimates for the data elements desired; (2) adjust PSS estimates for partial and total nonresponse; (3) collect 1990 early estimates data for the data elements; (4) weight the early estimate sample to reflect the sampling rates (probability of selection) and to adjust for total nonresponse separately by the sampling strata and by enrollment; (5) measure the change for these data elements between the PSS and the early estimates data collection for those schools that were in the early estimates sample and had the appropriate data for both 1989 and 1990; and (6) apply the change calculated in step 5 to the data from all of the schools in the PSS universe. Numbers in the tables and text have been rounded. Ratios have been calculated on the actual estimates rather than the rounded values. The 1990 early estimates were adjusted to account for both total and partial nonresponses.

Sample survey data, such as the private school estimates data, are subject to error due to variations in sampling. The standard error is a measure of the variability due to sampling when estimating a statistic. Estimates of standard errors were computed using a variance estimation procedure for complex sample survey data known as balanced repeated replication. The standard errors for private school early estimates for school years 1989–90 and 1990–91 are shown in the table below.

Students (1990–91)	Teachers (1990–91)	Graduates (1989–90)
96,270.9	7,341.5	15,850.2

Survey estimates are also subject to errors of reporting and errors made in the collection and processing of the data. These errors, called nonsampling errors, can sometimes bias the data. Nonsampling errors may include such things as differences in the respondents' interpretations of the meaning to the questions, differences related to the particular time the survey was conducted, or errors in data preparation. The survey instrument used in the 1990–91 private school early estimates data collection was revised as a result of the experiences of the 1989–90 private school early estimates data collection. The content of the survey was developed in consultation with representatives of private school associations attending NCES meetings for users of private school data. The questionnaire and instructions were reviewed extensively by NCES staff. Manual and machine editing of the questionnaires was conducted to check the data for accuracy and consistency. Data were keyed with 100-percent verification.

Undercoverage in the list and area frames is another possible source of nonsampling error. The area frame was used to complement the list frame through the identification of schools missing from the list frame. As the Private School Early Estimates System and the Private School Survey (the universe data collection) system develop, both the list and area frames will be updated periodically.

Questions concerning the Private School Early Estimates System can be directed to:

Sharon A. Bobbitt
Elementary/Secondary Education Statistics Division
National Center for Education Statistics
555 New Jersey Avenue NW
Washington, DC 20208

Private School Early Estimates System: 1991–92. Early in September 1991, questionnaires were mailed to a national probability sample of 1,163 private elementary and secondary schools. Telephone collection of the data began in early October and was completed in mid-October. The overall response rate was 96.5 percent: 1,064 of the 1,103 eligible schools. Some 60 of the original 1,163 schools in the sample were determined to be out of scope. After adjusting for out-of-scope schools, the weighted estimate of private schools is 24,284.

The sampling frame used for the Private School Early Estimates Survey was the 1989–1990 NCES Private School Survey (PSS). This survey collected information on the number of teachers and students in private schools, by school religious orientation and level as well as actual and projected counts of high school graduates. The PSS, and therefore the early estimates survey, uses two nonoverlapping frames: the list frame of approximately 21,515 eligible schools (the universe list), and an area frame developed by the Census Bureau, consisting of 933 schools identified in 124 sampled geographic areas (Primary Sampling Units or PSUs). The area frame is constructed from a sample survey designed to capture those schools not included in the universe list and is repeated every 2 years. The 933 schools identified in the sampled areas are weighted to a national estimate of the number of private schools not included in the universe list. This weighted number is then added to the universe count to produce an estimate of the total number of private schools in the United States.

For the early estimates, the list frame was stratified by level of school (elementary, secondary, combined, other, and unknown) and religious orientation (Catholic, other religious, and nonsectarian); within strata, schools were further sorted by Census region and by student membership size within region. Each school in the sorted frame was assigned a sampling measure of size equal to the square root of student membership.

The area frame was stratified by level of school (elementary, secondary, and other) and religious orientation (Catholic, other religious, and nonsectarian). Within strata, schools were further sorted by FIPS (Federal Information Processing Standards) state code, by FIPS county code within states, and by student membership within counties. Samples were selected with probabilities proportionate to size from each stratum. The measure of size used for this purpose was the square root of student membership multiplied by the inverse of the probability of selection of the PSU in which the school is located.

The list and area samples for the 1991 early estimates were the same as the 1990 early estimate samples.

The estimation procedure used the estimates obtained from the NCES frame of private schools (1989 Private School Survey) and adjusted those estimates for the change reflected in the 1991 early estimates data collections. The steps of this procedure were: 1) obtain Private School Survey (PSS) frame estimates for the data elements desired, adjusting for both partial and total nonresponse; 2) collect 1991 early estimates data for the data elements; 3) weight the early estimate sample to reflect the sampling rates (probability of selection), adjusting for total nonresponse separately by the sampling strata and by enrollment; 4) for each of the data elements, compute the weighted ratio of the 1991 early estimates data and the 1989 PSS data for those schools that reported for both time periods (the change from 1989 to 1991); and 5) multiply the change calculated in step 4 by the appropriate PSS estimate in step 1. Numbers in the tables and text have been rounded. Ratios have been calculated on the actual estimates rather than the rounded values. The 1990 early estimates were adjusted to account for both total and partial nonresponse.

Sample survey data, such as the private school estimates data, are subject to error due to variations in sampling. The standard error is a measure of the variability due to sampling when estimating a statistic. Estimates of standard errors were computed using a variance estimation procedure for complex sample survey data known as balanced repeated replication. The standard errors for private school early estimates for school years 1990–91 and 1991–92 are shown in the table below.

Students (1991–92)	Teachers (1991–92)	Graduates (1990–91)
80,031.0	8,320.1	13,062.3

Estimates of standard errors were computed using a variance estimation procedure for complex sample survey data known as balanced repeated replication (BRR)—a technique that splits the sample into several different half-samples. Weight adjusted estimates are computed from the half-samples. Finally, the standard error of the half-sample estimates is used as an approximation for the full-sample standard error.

Survey estimates are also subject to errors of reporting and errors made in the collection and processing of the data. These errors, called nonsampling errors, can sometimes bias the data. While general sampling theory can be used to estimate the sampling variability of an estimate, nonsampling errors are not easy to measure and usually require either an experiment to be conducted as part of the data collection procedure or use of data external to the study.

Nonsampling errors may include such things as differences in the respondents' interpretation of the meaning of the questions, differences related to the particular time the survey was conducted, or errors in data preparation. The content of the survey was developed in consultation with representatives of private school associations attending NCES meetings for users of private school data. The questionnaire and instructions were reviewed extensively by NCES staff. Manual and machine editing of the questionnaires was conducted to check the data for accuracy and consistency. Data were keyed with 100-percent verification.

Undercoverage in the list and area frames is another possible source of nonsampling error. The area frame was used to complement the list frame through the identification of schools missing from the list frame. The area frame represents approximately 20 percent of the total number of private schools. The estimates in this report do not take into account newly opened private schools. As a result, the estimates of students, teachers, and graduates may be biased and lower than the actual numbers. The 1991–92 list and area frame updates to the PSS will be reflected in next year's early estimates, and so new schools will be included in those new estimates. As the Private School Early Estimates System and the Private School Survey (the universe data collection) system develop, both the list and area frames will be updated periodically.

Questions concerning the Private School Early Estimates System can be directed to:

Sharon A. Bobbitt
Elementary/Secondary Education Statistics Division
National Center for Education Statistics
555 New Jersey Avenue NW
Washington, DC 20208

Private School Early Estimates System: 1992–93. Early in September 1992, advance questionnaires were mailed to a national probability sample of 1,167 private elementary and secondary schools. Telephone collection of the data began in early October and was completed in mid-October. The telephone data collection used Computer Assisted Telephone Interviewing (CATI) technology to collect the data and perform preliminary edits. The overall response rate was 93.31 percent: 1,045 of the 1,120 eligible schools. Some 47 of the original 1,167 schools in the sample were determined to be out-of-scope. After adjusting for out-of-scope schools, the weighted estimate of private schools is 26,011.

The sampling frame used for the Private School Early Estimates Survey was the 1991–92 NCES Private School Survey (PSS). This survey collected information on the number of teachers and students in private schools, by school religious orientation and level as well as actual and projected counts of high school graduates. The PSS, and therefore the early estimates survey, uses two nonoverlapping frames: the list frame of approximately 24,000 eligible schools (the universe list), and an area frame developed by the Census Bureau, consisting of 355 schools identified in 124 sampled geographic areas (Primary Sampling Units or PSUs). The area frame is constructed from a sample survey designed to capture those schools not included in the universe list and is repeated every 2 years. The 355 schools identified in the sampled areas are weighted to a national estimate of the number of private schools not included in the universe list. This weighted number is then added to the universe count to

produce an estimate of the total number of private schools in the United States.

For the early estimates, the list frame was stratified by level of school (elementary, secondary, and combined) and religious orientation (Catholic, other religious, and nonsectarian). Within strata, schools were further sorted by Census region (Northeast, Midwest, South, and West), by urbanicity (urban, suburban, and rural) within region, and by student membership size within urbanicity. Each school in the sorted frame was assigned a sampling measure of size equal to the square root of student membership.

The area frame was stratified by level of school (elementary, secondary, and combined) and religious orientation (Catholic, other religious, and nonsectarian). Within strata, schools were further sorted by FIPS (Federal Information Processing Standards) state code, by PSU within state, and by student membership within PSU. Samples were selected with probabilities proportionate to size from each stratum. The measure of size used for this purpose was the square root of student membership multiplied by the inverse of the probability of selection of the PSU in which the school is located.

The estimation procedure is a two-step process. The first step is to produce estimates based on the NCES frame for private schools (1991–92 Private School Survey). These estimates are adjusted for total school nonresponse, as well as item nonresponse. The second step is to update the PSS based estimates, using the data collected in the 1992 Early Estimates Survey (EES). This EES update is a ratio estimate of the 1992 estimate from EES divided by the 1991 estimate based on the 1991 PSS data for the EES sample. The estimates in the tables are the PSS based estimates time the EES update. The early estimates in this report incorporate the relevant estimates from the PSS and update then using data collected in the EES.

The private school early estimates are based on a sample; these estimates may differ somewhat from figures that would have been obtained if a complete census of private schools had been taken using the same questionnaire and procedures. The standard error indicates the magnitude of the sampling error, the variability due to sampling when estimating a statistic. It indicates how much variance there is in the population of possible estimates of a parameter for a given sample size. Standard errors can be used as a measure of the precision expected from a particular sample. If all possible samples were surveyed under similar conditions, intervals of 1.96 standard errors below to 1.96 standard errors above a particular statistic would include the true population parameter being estimated in about 95 percent of the samples. This is a 95 percent confidence interval. For example, for the ratio of private school pupils to private school teachers in 1992–93, the estimate for all private schools is 14.9 and the standard error is 0.2. The 95 percent confidence interval for this statistic extends from 14.9 - (0.2 times 1.96) to 14.9 + (0.2 times 1.96) or from 14.5 to 15.3. The standard error for the 4,964,258 students in private schools is 116,612. The 95 percent confidence interval for this statistic extends from 4,735,698 to 5,192,818.

Estimates of standard errors were computed using a variance estimation procedure for complex sample survey data known as balanced repeated replication (BRR)—a technique that splits the sample into several different half-samples. Weight adjusted estimates are computed from the half-samples. Finally, the standard error of the half-sample estimates is used as an approximation for the full-sample standard error. The standard errors for private school early estimates for school years 1991–92 and 1992–93 are shown in the table below.

Students (1992–93)	Teachers (1992–93)	Graduates (1991–92)
116,612.2	8,714.8	6,071.4

Survey estimates are also subject to errors of reporting and errors made in the collection and processing of the data. These errors, called nonsampling errors, can sometimes bias the data. While general sampling theory can be used to estimate the sampling variability of an estimate, nonsampling errors are not easy to measure and usually require either an experiment conducted as part of the data collection procedure or use of data external to the study.

Nonsampling errors may include such things as differences in the respondents' interpretation of the meaning of the questions, differences related to the particular time the survey was conducted, or errors in data preparation. The content of the survey was developed in consultation with representatives of private school associations attending NCES meetings for users of private school data. The questionnaire and instructions were reviewed extensively by NCES staff. The CATI instrument provided on-line internal consistency checks (i.e., totals equal sum of parts) as well as consistency checks with 1991 data for the sample school. Interviewers resolved discrepancies with the school during the course of the interview. Machine editing of the questionnaires was conducted to check the data for accuracy and consistency. Data inputs into the CATI system were transferred directly to processing, avoiding potential keying errors.

Undercoverage in the list and area frames is another possible source of nonsampling error. The area frame was used to complement the list frame through the identification of schools missing from the list frame. The area frame represents approximately 10 percent of the total number of private schools. The 1991–92 list and area frame updates to the PSS were reflected in this year's early estimates, and so schools newly opened since 1989 are included in those new estimates.

Questions concerning the Private School Early Estimates System can be directed to:

Sharon A. Bobbitt
Frank H. Johnson
Mary A. Rochon
Elementary/Secondary Education Statistics Division
National Center for Education Statistics
555 New Jersey Avenue NW
Washington, DC 20208

Integrated Postsecondary Education Data System

The Integrated Postsecondary Education Data System (IPEDS) surveys all postsecondary institutions, including universities and colleges, as well as institutions offering technical and vocational education beyond the high school level. This survey, which began in 1986, replaces and supplements the Higher Education General Information Survey (HEGIS).

The IPEDS consists of several integrated components that obtain information on who provides postsecondary education (institutions), who participates in it and completes it (students), what programs are offered and what programs are completed, and both the human and financial resources involved in the provision of institutionally based postsecondary education. Specifically, these components include: "Institutional Characteristics," including institutional activity; fall enrollment, including age and residence; fall enrollment in occupationally specific programs; completions; finance; staff; salaries of full-time instructional faculty; and academic libraries.

The higher education portion of this survey is a census of accredited 2- and 4-year colleges, while data from the technical and vocational institutions are collected through a sample survey. Thus, some portions of the data will be subject to sampling and nonsampling errors, while some portions will be subject only to nonsampling errors.

Prior to the establishment of IPEDS in 1986, HEGIS acquired and maintained statistical data on the characteristics and operations of institutions of higher education. Implemented in 1966, HEGIS was an annual universe survey of institutions listed in the latest **NCES Education Directory, Colleges and Universities**.

The information presented in this report draws on IPEDS surveys that solicited information concerning institutional characteristics, enrollment, degrees, and finances. The higher education portion of this system is a census of accredited 2- and 4-year colleges. Since these surveys cover all institutions in the universe, the data are not subject to sampling error.

However, they are subject to nonsampling error, the sources of which vary with the survey instrument. Each survey will therefore be discussed separately. Information concerning the nonsampling error of the enrollment and degrees surveys is drawn extensively from the HEGIS Post-Survey Validation Study conducted in 1979.

Institutional Characteristics. This survey provided the basis for the universe of institutions presented in the *Education Directory, Colleges and Universities*. The universe comprised institutions that met certain accreditation criteria and offered at least a 1-year program of college-level studies leading toward a degree. All of these institutions were certified as eligible by the U.S. Department of Education's Division of Eligibility and Agency Evaluation. Each fall, institutions listed in the previous year's *Directory* were asked to update a computer printout of their information.

Fall Enrollment. This survey has been part of the IPEDS or HEGIS series since 1966. The enrollment survey response rate was relatively high; the 1991 response rate was 86.6 percent. Major sources of nonsampling error for this survey were classification problems, the unavailability of needed data, interpretation of definitions, the survey due date, and operational errors. Of these, the classification of students appears to have been the main source of error. Institutions had problems in correctly classifying first-time freshmen, other first-time students, and unclassified students for both full-time and part-time categories. These problems occurred most often at 2-year institutions (private and public) and private 4-year institutions. In the 1977–78 HEGIS validation studies, the classification problem led to an estimated overcount of 11,000 full-time students and an undercount of 19,000 part-time students. Although the ratio of error to the grand total was quite small (less than 1 percent), the percentage of errors was as high as 5 percent for detailed student levels and even higher at certain aggregation levels.

Beginning with fall 1986, the survey system was redesigned with the introduction of the Integrated Postsecondary Education (IPEDS) (see above). The new survey system comprises all postsecondary institutions, but also maintains comparability with earlier surveys by allowing HEGIS institutions to be tabulated separately. The new system also provides for preliminary and revised data releases. This allows the Center flexibility to release early data sets while still maintaining a more accurate final data base.

Completions. This survey was part of the HEGIS series throughout its existence. However, the degree classification taxonomy was revised in 1970–71, 1982–83, and 1991–92. Collection of degree data has been maintained through the IPEDS system.

Though information from survey years 1970–71 through 1981–82 is directly comparable, care must be taken if information before or after that period is included in any comparison. Degrees-conferred trend tables arranged by the 1991–92 classification were added to *Projections of Education Statistics* to provide consistent data from 1970–71 to 1991–92. Data in this edition on associate degrees are not comparable with figures for earlier years. The nonresponse rate did not appear to be a significant source of nonsampling error for this survey. The return rate over the years was high, with the response rate for the 1991–92 survey at 94.1 percent. Because of the high return rate, nonsampling error caused by imputation was also minimal.

The major sources of nonsampling error for this survey were differences between the NCES program taxonomy and taxonomies used by the colleges, classification of double majors and double degrees, operational problems, and survey timing. In the 1979 HEGIS validation study, these sources of nonsampling were found to contribute to an error rate of 0.3 percent overreporting of bachelor's degrees and 1.3 percent overreporting of master's degrees. The differences, however, varied greatly among fields. Over 50 percent of the fields selected for the validation study had no errors identified. Categories of fields that had large differences were business and management, education, engineering, letters, and psychology. It was also shown

that differences in proportion to the published figures were less than 1 percent for most of the selected fields that had some errors. Exceptions to these were: master's and Ph.D. programs in labor and industrial relations (20 percent and 8 percent); bachelor's and master's programs in art education (3 percent and 4 percent); bachelor's and Ph.D. programs in business and commerce, and in distributive education (5 percent and 9 percent); master's programs in philosophy (8 percent); and Ph.D. programs in psychology (11 percent).

Financial Statistics. This survey was part of the HEGIS series and has been continued under the IPEDS system. Changes were made in the financial survey instruments in fiscal years (FY) 1976, 1982, and 1987. The FY 76 survey instrument contained numerous revisions to earlier survey forms and made direct comparisons of line items very difficult. Beginning in FY 82, Pell Grant data were collected in Federal restricted grants and contracts revenues and restricted scholarships and fellowships expenditures. The introduction of the Integrated Postsecondary Education Data System (IPEDS) in the FY 87 survey included several important changes to the survey instrument and data processing procedures. While these changes were significant, considerable effort has been made to present only comparable information on trends in this report and to note inconsistencies. Finance tables for this publication have been adjusted by subtracting the largely duplicative Pell Grant amounts from the later data to maintain comparability with pre-FY 82 data.

Possible sources of nonsampling error in the financial statistics include nonresponse, imputation, and misclassification. The response rate has been about 85 to 90 percent for most of the years reported. The response rate for the FY 1989 survey was 83.5 percent.

Two general methods of imputation were used in HEGIS. If the prior years' data were available for a nonresponding institution, these data were inflated using the Higher Education Price Index and adjusted according to changes in enrollments. If there were no data for the previous four years, current data were used from Peer institutions selected for location (state or region), control, level, and enrollment size of institution. In most cases, estimates for nonreporting institutions in IPEDS were made using data from peer institutions.

Beginning with FY 87, the new system (IPEDS) comprises all postsecondary institutions, but also maintains comparability with earlier surveys by allowing 2- and 4-year HEGIS institutions to be tabulated separately. The finance data tabulated for this publication reflect totals for the HEGIS or higher education institutions only.

To reduce reporting error, NCES used national standards for reporting finance statistics. These standards are contained in *Financial Accounting and Reporting Manual for Higher Education* published in 1990 by the National Association of College and University Business Officers. Definitions and formats in the survey, wherever possible, are consistent with those in this text.

Questions concerning the surveys used as data sources for this report or other questions concerning HEGIS can be directed to:

Postsecondary Education Statistics Division
National Center for Education Statistics
555 New Jersey Avenue NW
Washington, DC 20208

Bureau of the Census

Current Population Survey

Current estimates of school enrollment, as well as social and economic characteristics of students, are based on data collected in the Census Bureau's monthly survey of about 60,000 households. The monthly Current Population Survey (CPS) sample consists of 729 areas comprising 1,973 counties, independent cities, and minor civil divisions throughout the 50 states and the District of Columbia. The sample was initially selected from the 1980 census files and is periodically updated to reflect new housing construction.

The monthly CPS deals primarily with labor force data for the civilian noninstitutional population (i.e., excluding military personnel and their families living on post and inmates of institutions). In addition, on October of each year, supplemental questions are asked about highest grade completed, level of current enrollment, attendance status, number and types of courses, degree or certificate objective, and type of organization offering instruction for each member of the household.

The estimation procedure used for the monthly CPS data involves inflating weighted sample results to independent estimates of characteristics of the civilian noninstitutional population in the United States by age, sex, and race. These independent estimates are based on statistics from decennial censuses that include statistics on births, deaths, immigration, and emigration and statistics on the population in the armed services. Generalized standard error tables are in the *Current Population Reports*. The data are subject to both nonsampling and sampling errors.

More information is available in the *Current Population Reports*, Series P-20, or by contacting:

Education and Social Stratification Branch
Bureau of the Census
U.S. Department of Commerce
Washington, DC 20233

School Enrollment. Each October, the Current Population Survey (CPS) includes supplemental questions on the enrollment status of the population 3 years old and over. The main sources of nonsampling variability in the responses to the supplement are those inherent in the survey instrument. The question concerning educational attainment may be sensitive for some respondents who may not want to acknowledge their lack of a high school diploma. The

question of current enrollment may not be answered accurately for various reasons. Some respondents may not know current grade information for every student in the household, a problem especially prevalent for households with members in college or in nursery school. Confusion over college credits or hours taken by a student may make it difficult to determine the year in which the student is enrolled. Problems may occur with the definition of nursery school (a group or class organized to provide educational experiences for children) where respondents' interpretations of "educational experiences" vary.

Questions concerning the CPS "School Enrollment" survey may be directed to:

Education and Social Stratification Branch
Bureau of the Census
U.S. Department of Commerce
Washington, DC 20233

State population projections. These state population projections were prepared using a cohort-component method by which each component of population change—births, deaths, state-to-state migration flows, international in-migration, and international out-migration—was projected separately for each birth cohort by sex, race, and Hispanic origin. The basic framework was the same as in past Census Bureau projections. However, in the absence of detailed components for some race and Hispanic origin groups, the necessary starting point components were derived by indirect standardization from the starting points used in the national projections.

The cohort-component method is based on the traditional demographic accounting system:

$$P_1 = P_0 + B - D + DIM - DOM + IIM - IOM$$

where:

P_1 = population at the end of the period

P_0 = population at the beginning of the period

B = births during the period

D = deaths during the period

DIM = domestic in-migration during the period

DOM = domestic out-migration during the period

IIM = international in-migration during the period

IOM = international out-migration during the period

To generate population projections with this model, we first created separate data sets for each of these components. In general, the assumptions concerning the future levels of fertility, mortality, and international migration are consistent with the assumptions developed for the national population projections released by the Census Bureau.

Once the data for each component were developed, it was a relatively straightforward process to apply the cohort-component method and produce the projections. For each projection year the base population for each state was disaggregated into the four racial categories (White; Black; American Indian, Eskimo, and Aleut; and Asian and Pacific Islander), by sex, and single year of age (ages 0 to 85+). The next step was to survive each age-sex-race group forward 1 year using the pertinent survival rate. The internal redistribution of the population was accomplished by applying the appropriate state-to-state migration rates to the survived population in each state. The projected out-migrants were subtracted from the state of origin and added to the state of destination (as in-migrants). Next, the appropriate number of immigrants from abroad were added to each group. The populations under age 1 were created by applying the appropriate age-race-specific birth rates to females of childbearing age. The number of births by sex and race were survived forward and exposed to the appropriate migration rate to yield the population under age 1. The final results of the projection process were adjusted to be consistent with the national population projections by single years of age, sex, and race. The entire process was then repeated for each year of the projection. This same process was repeated for the Hispanic Origin population separately.

Questions concerning the state population projections may be directed to:

Population Projections Branch
Bureau of the Census
U.S. Department of Commerce
Washington, D.C. 20233

Other Sources

National Education Association

Estimates of School Statistics

The National Education Association (NEA) reports teacher, revenue, and expenditure data in its annual publication, *Estimates of School Statistics*. Each year, NEA prepares regression-based estimates of financial and other education statistics and submits them to the states for verification. Generally, about 30 states adjust these estimates based on their own data. These preliminary data are published by NEA along with revised data from previous years. States are asked to revise previously submitted data as final figures become available. The most recent publication contains all changes reported to the NEA.

Further information on the NEA survey can be obtained from:

National Education Association—Research
1201 16th Street NW
Washington, DC 20036

DRI/McGraw-Hill

DRI/McGraw-Hill provides an information system that includes more than 125 databases: simulation and planning models; regular publications and special studies; data retrieval and management systems; and access to experts on economic, financial, industrial, and market activities. One service is the DRI U.S. Annual Model Forecast Data Bank, which contains annual projections of the U.S. economic and financial conditions, including forecasts for the federal government, incomes, population, prices and wages, and state and local government, over a long-term (10 to 25-year) forecast period.

Additional information is available from:

DRI/McGraw-Hill
24 Hartwell Avenue
Lexington, MA 02173

Appendix D

Glossary

Data Terms

Associate degree: A degree granted for the successful completion of a subbaccalaureate program of studies, usually requiring at least 2 years (or the equivalent) of full-time college-level study. This term includes degrees granted in a cooperative or work–study program.

Average daily attendance (ADA): The aggregate attendance of a school during a reporting period (normally a school year) divided by the number of days school is in session during this period. Only days on which the pupils are under the guidance and direction of teachers should be considered days in session.

Average daily membership (ADM): The aggregate membership of a school during a reporting period (normally a school year) divided by the number of days school is in session during this period. Only days on which the pupils are under the guidance and direction of teachers should be considered as days in session. The average daily membership for groups of schools having varying lengths of terms is the average of the average daily memberships obtained for the individual schools.

Bachelor's degree: A degree granted for the successful completion of a baccalaureate program of studies, usually requiring at least 4 years (or the equivalent) of full-time college-level study. This term includes degrees granted in a cooperative or work–study program.

Classroom teacher: A staff member assigned the professional activities of instructing pupils in self-contained classes or courses, or in classroom situations. Usually expressed in full-time equivalents.

Cohort: A group of individuals that have a statistical factor in common, for example, year of birth.

College: A postsecondary school that offers a general or liberal arts education, usually leading to an associate, bachelor's, master's, doctor's, or first-professional degree. Junior colleges and community colleges are included in this term.

Constant dollars: Dollar amounts that have been adjusted by means of price and cost indexes to eliminate inflationary factors and allow direct comparison across years.

Consumer Price Index (CPI): This price index measures the average change in the cost of a fixed market basket of goods and services purchased by consumers.

Current dollars: Dollar amounts that have not been adjusted to compensate for inflation.

Current expenditures (elementary/secondary): The expenditures for operating local public schools, excluding capital outlay and interest on school debt. These expenditures include such items as salaries for school personnel, fixed charges, student transportation, school books and materials, and energy costs.

Current expenditures per pupil in average daily attendance: Current expenditures for the regular school term divided by the average daily attendance of full-time pupils (or full-time-equivalency of pupils) during the term. See also *current expenditures* and *average daily attendance*.

Current-fund expenditures (higher education): Money spent to meet current operating costs, including salaries, wages, utilities, student services, public services, research libraries, scholarships and fellowships, auxiliary enterprises, hospitals, and independent operations. Excludes loans, capital expenditures, and investments.

Current Population Survey: See Appendix C, Data Sources.

Disposable income: Current income received by persons less their contributions for social insurance, personal tax, and nontax payments. It is the income available to persons for spending and saving. Nontax payments include passport fees, fines and penalties, donations, and tuitions and fees paid to schools and hospitals operated mainly by the government. See also *personal income*.

Doctor's degree: An earned degree carrying the title of doctor. The Doctor of Philosophy degree (Ph.D.) is the highest academic degree and requires mastery within a field of knowledge and demonstrated ability to perform scholarly research. Other doctorates are awarded for fulfilling specialized requirements in professional fields, such as education (Ed.D.), musical arts (D.M.A.), business administration (D.B.A.), and engineering (D.Eng. or D.E.S.). Many doctor's degrees in both academic and professional fields require an earned master's degree as a prerequisite. First-professional degrees, such as M.D. and D.D.S., are not included under this heading.

Educational and general expenditures: The sum of current funds expenditures on instruction, research, public service, academic support, student services, institutional support, operation and maintenance of plant, and awards from restricted and unrestricted funds.

Elementary school: A school classified as elementary by state and local practice and composed of any span of grades not above grade 8. A preschool or kindergarten school is included under this heading only if it is an integral part of an elementary school or a regularly established school system.

Elementary and secondary schools: As used in this publication, includes only regular schools, that is, schools that are part of state and local school systems and also most private elementary and secondary schools, both religiously affiliated and nonsectarian. Schools not included in this term are subcollegiate departments of institutions of higher education, American residential schools for exceptional children, federal schools for Indians, and federal schools on military posts and other federal installations.

Enrollment: The number of students registered in a given school unit at a given time, generally in the fall of a year.

Expenditures: Charges incurred, whether paid or unpaid, that are presumed to benefit the current fiscal year. For elementary and secondary schools, these include all charges for current outlays plus capital outlays and interest on school debt. For institutions of higher education, these include current outlays plus capital outlays. For government, these include charges net of recoveries and other correcting transactions other than for retirement of debt, investment in securities, or extension of credit. Government expenditures include only external transactions, such as the provision of perquisites or other payments in kind. Aggregates for groups of governments exclude intergovernmental transactions.

Expenditures per pupil: Charges incurred for a particular period of time divided by a student unit of measure, such as average daily attendance or average daily membership.

First-professional degree: A degree that signifies both completion of the academic requirements for beginning practice in a given profession and a level of professional skill beyond that normally required for a bachelor's degree. This degree usually is based on a program requiring at least 2 academic years of work before entrance and a total of at least 6 academic years of work to complete the degree program, including both prior required college work and the professional program itself. By NCES definition, first-professional degrees are awarded in the fields of dentistry (D.D.S or D.M.D.), medicine (M.D.), optometry (O.D.), osteopathic medicine (D.O.), pharmacy (D.Phar.), podiatric medicine (D.P.M.), veterinary medicine (D.V.M.), chiropractic (D.C. or D.C.M.), law (LL.B. or J.D.), and theological professions (M.Div. or M.H.L.).

First-professional enrollment: The number of students enrolled in a professional school or program that requires at least 2 years of academic college work for entrance and a total of at least 6 years for a degree. By NCES definition, first-professional enrollment includes only students in certain programs. (See *first-professional degree* for a list of programs.)

Full-time enrollment: The number of students enrolled in higher education courses with total credit load equal to at least 75 percent of the normal full-time course load.

Full-time-equivalent (FTE) enrollment: For institutions of higher education, enrollment of full-time students, plus the full-time equivalent of part-time students as reported by institutions. In the absence of an equivalent reported by an institution, the FTE enrollment is estimated by adding one-third of part-time enrollment to full-time enrollment.

Full-time worker: In educational institutions, an employee whose position requires being on the job on school days throughout the school year at least the number of hours the schools are in session; for higher education, a member of an educational institution's staff who is employed full time.

Graduate: An individual who has received formal recognition for the successful completion of a prescribed program of studies.

Graduate enrollment: The number of students who hold the bachelor's or first-professional degree, or the equivalent, and who are working toward a master's or doctor's degree. First-professional students are counted separately. These enrollment data measure those students who are registered at a particular time during the fall. At some institutions, graduate enrollment also includes students who are in postbaccalaureate classes but not in degree programs.

High school: A secondary school offering the final years of high school work necessary for graduation, usually including grades 10, 11, and 12 (in a 6-3-3 plan), or grades 9, 10, 11, and 12 (in a 6-2-4 plan).

Higher education: Study beyond secondary school at an institution that offers programs terminating in an associate, baccalaureate, or higher degree.

Higher education institutions (traditional classifications):

4-year institution: An institution legally authorized to offer and offering at least a 4-year program of college-level studies wholly or principally creditable toward a bachelor's degree. A university is a postsecondary institution that typically includes one or more graduate professional schools.

2-year institution: An institution legally authorized to offer and offering at least a 2-year program of college-level studies that terminates in an associate degree or is principally creditable toward a baccalaureate.

Higher Education Price Index: A price index which measures average changes in the prices of goods and services purchased by colleges and universities through current-fund education and general expenditures (excluding expenditures for sponsored research and auxiliary enterprises).

Instructional staff: Full-time-equivalent number of positions, not the number of individuals occupying the positions during the school year. In local schools, it includes all public elementary and secondary (junior and senior high) day-school positions that are in the nature of teaching or the improvement of the teaching–learning situation. Includes consultants or supervisors of instruction, principals, teachers, guidance personnel, librarians, psychological personnel, and other instructional staff. Excludes administrative staff, attendance personnel, clerical personnel, and junior college staff.

Master's degree: A degree awarded for successful completion of a program generally requiring 1 or 2 years of full-time college-level study beyond the bachelor's degree. One type of master's degree, including the Master of Arts degree (M.A.) and the Master of Science degree (M.S.) is awarded in the liberal arts and sciences for advanced scholarship in a subject field or discipline and demonstrated ability to perform scholarly research. A second type of master's degree is awarded for the completion of a professionally oriented program, for example, an M.Ed. in education, an M.B.A. in business administration, an M.F.A. in fine arts, an M.M. in music, an M.S.W. in social work, or an M.P.A. in public administration. A third type of master's degree is awarded in professional fields for study beyond the first-professional degree, for example, the Master of Laws (LL.M.) and Master of Science in various medical specializations.

Part-time enrollment: The number of students enrolled in higher education courses with a total credit load of less than 75 percent of the normal full-time credit load.

Personal income: Current income received by persons from all sources minus their personal contributions for social insurance. Classified as "persons" are individuals (including owners of unincorporated firms), nonprofit institutions serving individuals, private trust funds, and private noninsured welfare funds. Personal income includes transfers (payments not resulting from current production) from government and business such as social security benefits, military pensions, and so forth, but excludes transfers among persons.

Postbaccalaureate enrollment: The number of graduate and first-professional students working toward advanced degrees and students enrolled in graduate-level classes but not enrolled in degree programs. See also *graduate enrollment* and *first-professional enrollment.*

Private institution: A school or institution that is controlled by an individual or agency other than a state, a subdivision of a state, or the federal government; that is usually supported primarily by other than public funds; and the operation of whose program rests with other than publicly elected or appointed officials.

Property tax: The sum of money collected from a tax levied against the value of property.

Public school or institution: A school or institution controlled and operated by publicly elected or appointed officials and deriving its primary support from public funds.

Pupil–teacher ratio: The enrollment of pupils at a given period of time, divided by the full-time-equivalent number of classroom teachers serving these pupils during the same period.

Revenues: All funds received from external sources, net of refunds and correcting transactions. Noncash transactions such as receipt of services, commodities, or other receipts "in kind" are excluded, as are funds received from the issuance of debt, liquidation of investments, or nonroutine sale of property.

Revenues receipts: Additions to assets that do not incur an obligation that must be met at some future date and do not represent exchanges of property for money. Assets must be available for expenditures.

Salary: The total amount regularly paid or stipulated to be paid to an individual, before deductions, for personal services rendered while on the payroll of a business or organization.

School: A division of the school system consisting of students in one or more grades or other identifiable groups and organized to give instruction of a defined type. One school may share a building with another school or one school may be housed in several buildings.

Secondary instructional level: The general level of instruction provided for pupils in secondary schools (generally covering grades 7 through 12 or 9 through 12)

and any instruction of a comparable nature and difficulty provided for adults and youth beyond the age of compulsory school attendance.

Secondary school: A school including any span of grades beginning with the next grade following an elementary or middle school (usually 7, 8, or 9) and ending with or below grade 12. Both junior high schools and senior high schools are included.

Senior high school: A secondary school offering the final years of high school work necessary for graduation.

Student: An individual for whom instruction is provided in an educational program under the jurisdiction of a school, school system, or other educational institution. No distinction is made between the terms "student" and "pupil," although "student" may refer to one receiving instruction at any level while "pupil" refers only to one attending school at the elementary or secondary level. The term "student" is used to include individuals at all instructional levels. A student may receive instruction in a school facility or in another location, such as at home or in a hospital. Instruction may be provided by direct student-teacher interaction or by some other approved medium, such as television, radio, telephone, or correspondence.

Tax base: The collective value of objects, assets, and income components against which a tax is levied.

Total expenditure per pupil in average daily attendance: Includes all expenditures allocable to per pupil costs divided by average daily attendance. These allocable expenditures include current expenditures for regular school programs, interest on school debt, and capital outlay. Beginning in 1980-81, expenditures for administration by state governments are excluded and expenditures for other programs (summer schools, community colleges, and private schools) are included.

Unclassified students: Students who are not candidates for a degree or other formal award, although they are taking higher education courses for credit in regular classes with other students.

Undergraduate students: Students registered at an institution of higher education who are working in a program leading to a baccalaureate or other formal award below the baccalaureate, such as an associate degree.

Statistical Terms

Auto-Correlation: Correlation of the error terms from different observations of the same variable. Also called *serial correlation.*

Degrees of freedom: The number of free or linearly independent sample observations used in the calculation of a statistic.

Dependent variable: A mathematical variable whose value is determined by that of one or more other variables in a function. In regression analysis, when a random variable, y, is expressed as a function of variables x_1, x_2,.... plus a stochastic term, the y is known as the "dependent variable."

Double exponential smoothing: A method that takes a single smoothed average component of demand and smoothes it a second time to allow for estimation of a trend effect.

Durbin-Watson statistic: A statistic testing the independence of errors in least squares regression against the alternative of first-order serial correlation. The statistic is a simple linear transformation of the first-order serial correlation of residuals and, although its distribution is unknown, it is tested by bounding statistics that follow R. L. Anderson's distribution.

Econometrics: The quantitative examination of economic trends and relationships using statistical techniques, and the development, examination, and refinement of those techniques.

Estimate: A numerical value obtained from a statistical sample and assigned to a population parameter. The particular value yielded by an estimator in a given set of circumstances or the rule by which such particular values are calculated.

Estimating equation: An equation involving observed quantities and an unknown that serves to estimate the latter.

Estimation: Estimation is concerned with inference about the numerical value of unknown population values from incomplete data, such as a sample. If a single figure is calculated for each unknown parameter, the process is called point estimation. If an interval is calculated within which the parameter is likely, in some sense, to lie, the process is called interval estimation.

Exogenous variable: Variables for which the values are determined outside the model but which influence the model.

Exponential smoothing: A method used in time series to smooth or to predict a series. There are various forms, but all are based on the supposition that more remote history has less importance than more recent history.

Ex-Ante forecast: When forecasting a dependent variable for some time period t using a model with at least one independent variable, the forecast of the dependent variable is an ex-ante forecast if the values for the independent variables for time period t are themselves not known.

Ex-Post forecast: When forecasting a dependent variable for some time period t using a model with at least one independent variable, the forecast of the dependent variable is an ex-post forecast if the values for the independent variables for time period t are the actual values. Ex-post forecasts are often used in forecast evaluation.

First-Order serial correlation: When errors in one time period are correlated directly with errors in the ensuing time period. Also called *auto-correlation.*

Forecast: An estimate of the future based on rational study and analysis of available pertinent data, as opposed to subjective prediction.

Forecasting: Assessing the magnitude which a quantity will assume at some future point in time: as distinct from "estimation," which attempts to assess the magnitude of an already existent quantity.

Forecast horizon: The number of time periods into the future which are forecasted. Forecasts for next year are said to have a 1-year forecast horizon.

Function: A mathematical correspondence that assigns exactly one element of one set to each element of the same or another set. A variable that depends on and varies with another.

Functional form: A mathematical statement of the relationship among the variables in a model.

Independent variable: In regression analysis, when a random variable, y, is expressed as a function of variables x_1, x_2,.... plus a stochastic term, the x's are known as "independent variables."

Lag: An event occurring at time $t + k$ $(k>0)$ is said to lag behind an event occurring at time t, the extent of the lag being k. An event occurring k time periods before another may be regarded as having a negative lag.

Maximum likelihood estimation: A method of estimating a parameter or parameters of a population by that value (or values) that maximizes (or maximize) the likelihood of a sample.

Mean absolute percentage error (MAPE): The average value of the absolute value of errors expressed in percentage terms.

Model: A system of postulates, data, and inferences presented as a mathematical description of a phenomenon such as an actual system or process. The actual phenomenon is represented by the model in order to explain it, to predict it, and to control it.

Ordinary least squares (OLS): The estimator that minimizes the sum of squared residuals.

Parameter: A quantity that describes a statistical population.

Projection: In relation to a time series, an estimate of future values based on a current trend.

R^2: The coefficient of determination; the square of the correlation coefficient between the dependent variable and its OLS estimate.

$\bar{R}^2$ (also called the adjusted R^2): The coefficient of determination adjusted for the degrees of freedom.

Regression analysis: A statistical technique for investigating and modeling the relationship between variables.

Rho: A measure of the correlation coefficient between errors in time period t and time period t minus 1.

Serial correlation: Correlation of the error terms from different observations. Also called *auto-correlation.*

Standard error of estimate: An expression for the standard deviation of the observed values about a regression line. An estimate of the variation likely to be encountered in making predictions from the regression equation.

Time series: A set of ordered observations on a quantitative characteristic of an individual or collective phenomenon taken at different points in time. Usually the observations are successive and equally spaced in time.

Time series analysis: The branch of quantitative forecasting in which data for one variable are examined for patterns of trend, seasonality, and cycle.

Variable: A quantity that may assume any one of a set of values.

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